

Brune, Doug

From: Darrel Plummer <DPlummer@kdheks.gov>
Sent: Friday, June 13, 2014 10:43 AM
To: Mindrup, Mary; Flournoy, Karen; Huffman, Diane
Cc: Marquess, Scott; Brune, Doug; Mike Tate; Cathy Tucker-Vogel
Subject: RE: Pretty Prairie; Small Kansas town faces \$4.6 million bill for broken water system

Mary,

We not at liberty to share the actual cost estimate sheet of the project with you since we have not officially received the final PER yet. However, the preliminary figure of 4.6 M includes costs for replacing 95 year old infrastructure; sand cast iron water lines and the water tower. The approximate breakdown comes out something like this:

Nitrate Ion Exchange Treatment Plant – 1.6 M
Elevated Storage Tank - .75 M
Replacement of Cast Iron Water Lines – 1.3 M
Engineering/Administration/Land Costs – 1.0 M

As you can see the capital cost to address the nitrate problem is probably only about 2.0 -2.5 M or so with the engineering and administration and land costs figured in. But, it does not take into account the \$50,000 - \$100,000 per year O&M cost that the system will have to come up with to keep the plant operating properly. Still a bite for these small shrinking communities.

This also highlights the lack of active asset management going on in communities. Water sales is one of the few revenue generators, besides taxes, that these communities have so they skim off what they can to support other community programs. So now we have communities that haven't had any major upgrades to their infrastructure for almost 100 years...or longer.

We have a strong asset management program as well as other important TFM programs for communities to take advantage of through the Capacity Development Program but these programs are voluntary and are not utilized nearly as much as they need to be. Asset management needs to be in practice long before the community reaches a crisis.

Thanx,

Darrel R. Plummer
Chief, Public Water Supply Section
Kansas Dept. of Health and Environment
Bureau of Water - Public Water Supply Section
1000 SW Jackson; Suite 420
Topeka, KS 66612
Phone: (785) 296-5523
Fax: (785) 296-5509

From: Mindrup, Mary [mailto:Mary@epa.gov]
Sent: Friday, June 13, 2014 9:51 AM
To: Flournoy, Karen; Huffman, Diane
Cc: Marquess, Scott; Brune, Doug; Mike Tate; Darrel Plummer
Subject: RE: Pretty Prairie; Small Kansas town faces \$4.6 million bill for broken water system

All – Further discussion of small systems specifically those impacted by Nitrate is very important. Cost for infrastructure is high for very small systems who may becoming smaller. It is important to understand what has been occurring across the country to impact decisions of future action.

Small systems is an issue faced by all states. At EPA (Office of Water, Office of Ground Water and Drinking Water) has identified the overall small system issue for public water systems as an EPA priority goal for FY12-13 and now for FY14-15. More information on EPA priority goals can be found at: <http://www.performance.gov/agency/environmental-protection-agency#apg>

The small system priority for PWS as written states: *"Improve public health protection for persons served by small drinking water systems, which account for more than 97% of public water systems in the U.S., by strengthening the technical, managerial, and financial capacity of those systems."*

In support of this goal, EPA has had two rounds of competed technical assistance grants of which the EFC has won a portion of the competition. These grantees are to work with states to identify priority work areas within the states. Both rounds of grants included work with small waste water systems. For the first round of the agency priority goal, HQ, Regions and states worked on a variety of activities that focused attention on such issues as improving asset management practices, reaching out to noncommunity water systems, coordinating among funding agencies to help small systems, and recruiting operators to fill vacancies. HQ is preparing a report of what has been accomplished by states and EPA regarding the Small System Priority Goal, which is going through final signature and included in this report is a lot of work Kansas has done through their capacity development program to improve small systems financial, managerial and technical capacity.

As for ASDWA, they have also have been focused on small systems. Their website, <http://www.asdwa.org/index.cfm?fuseaction=Page.viewPage&pageId=503>, provides focused attention to the activities that are ongoing.

As for ORD projects specifically for Nitrate, we can look further into this. There was an effort underway between OGWDW and ORD last year to look at available treatment options and costs for nitrate contamination, but was placed on hold due to staff resources. The treatment cost for referenced system in this email also needs further discussion. We are aware of other similar size systems with lower costs to achieve nitrate compliance.

I support including this important topic at the 4-state water director's meeting. To further this discussion it would be important to include the state drinking water managers for this part of the meeting.

Thanks,

Mary A T Mindrup
Chief, Drinking Water Management Branch
Water, Wetlands, and Pesticides Division
US Environmental Protection Agency Region 7
11201 Renner Boulevard
Lenexa, KS 66219
913-551-7431

From: Flournoy, Karen
Sent: Monday, June 09, 2014 8:07 AM
To: Huffman, Diane
Cc: Marquess, Scott; Mindrup, Mary; Brune, Doug; mtate@kdheks.gov; DPlummer@kdheks.gov
Subject: Pretty Prairie; Small Kansas town faces \$4.6 million bill for broken water system

All-Darrel raises a very good point in his email. There needs to be a way to provide safe water without bankrupting the communities and negatively impacting state SRF programs.

Is there a possibility the EFC along with one or both universities could look at how to address these small communities? Yes-I realize it would take \$ but it is important so we can do some leg work to find \$. Do we know or can we find out if ORD is doing anything on this issue? I doubt we are the only Region facing this issue-we may have more small rural towns, but they exist in other states, too. I think we need to put some effort and leadership into this topic. What is OGWDW's take on this issue? What is ASDWA doing on this? thanks Karen

From: Huffman, Diane

Sent: Monday, June 09, 2014 7:28 AM

To: Flournoy, Karen

Subject: Fw: Pretty Prairie; Small Kansas town faces \$4.6 million bill for broken water system

We should discuss.

From: Darrel Plummer <DPlummer@kdheks.gov>

Sent: Friday, June 06, 2014 4:21:05 PM

To: Brune, Doug; Marquess, Scott

Cc: Mindrup, Mary; Huffman, Diane

Subject: Pretty Prairie; Small Kansas town faces \$4.6 million bill for broken water system

Assume you saw this by now but thought I'd pass this along anyway.

<http://cjonline.com/news/2014-06-04/small-kansas-town-faces-46-million-bill-broken-water-system>

This emphasizes our concerns about these small systems; like Pretty Prairie and smaller systems under 200 pop. like Englewood, Bogue, Timken and Mahaska. As I've said before, these are dying communities, they are not growing and thriving. I'm afraid the time is coming when these systems will begin defaulting on the SRF and RD loans we so eagerly "pushed" them into so they could meet state and federal regulatory requirements. Being a state that leverages the SRF programs through the bond market we are not anxious to make loans of this magnitude to these types of systems. We do not want to have our bond rating lowered. I see a "train wreck" ahead if we can't find a better more cost effective way to work with these small systems. As with the S&L crisis of the 1980s and the more recent financial crisis in 2007-2012, government will be left holding the preverbal "bag" once again. Not good.

Thanx,

Darrel R. Plummer

Chief, Public Water Supply Section

Kansas Dept. of Health and Environment

Bureau of Water - Public Water Supply Section

1000 SW Jackson; Suite 420

Topeka, KS 66612

Phone: (785) 296-5523

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Brune, Doug

From: Darrel Plummer <DPlummer@kdheks.gov>
Sent: Friday, August 15, 2014 5:02 PM
To: Marquess, Scott
Cc: Brune, Doug
Subject: FYI: Pretty Prairie
Attachments: Whittemore KGS Report Pretty Prairie nitrate 2014.pdf; Mitchell August 11_2014 letter.pdf

According to Mr. Hoch, he and the city took EPA to district court on this matter in the mid-90's and were successful so he and the city are prepared to enlighten the next generation of state and federal folks on the matter if they need to do so. [My paraphrase, not a direct quote.]

My initial read on the matter is that the city is looking for a three year "stay" on any enforcement action requiring them to install treatment in order to see if a "robust" source water protection program, based on Whittemore's findings, will decrease the nitrate levels in the area. I don't think they are thinking in three years source water protection will decrease nitrate levels below the MCL. At the end of three years they are hoping data will show that the trend will be toward lower nitrate levels rather than toward a continued increase in nitrate levels. They will then have more justification to propose continuing on solely with source water protection efforts in lieu of installing treatment even though they will likely still be in violation of the MCL.

I also attached a copy of John Mitchell's August 11, 2014 letter to the city.

Thanx,

Darrel R. Plummer
Chief, Public Water Supply Section
Kansas Dept. of Health and Environment
Bureau of Water - Public Water Supply Section
1000 SW Jackson; Suite 420
Topeka, KS 66612
Phone: (785) 296-5523
Fax: (785) 296-5509

From: Hoch, Wyatt [<mailto:whoch@foulston.com>]
Sent: Wednesday, August 13, 2014 5:19 PM
To: Darrel Plummer
Subject: Pretty Prairie

Thanks again for visiting with me this afternoon about the Pretty Prairie public water supply nitrate issue.

I've attached to this message an e-copy of the Don Whittemore July 2014 study that I referred to in our conversation. I'll obtain and read the John Mitchell letter to the City, then get back to you.

Wyatt A. Hoch
Foulston Siefkin LLP
1551 N. Waterfront Parkway, Suite 100
Wichita, KS 67206
Direct Phone: 316.291.9769
Direct Fax: 866.450.2989
whoch@foulston.com



Robert Moser, MD, Secretary

Department of Health & Environment

Sam Brownback, Governor

August 11, 2014

Katie Belden
City Council
City of Pretty Prairie
119 W Main - PO Box 68
Pretty Prairie, KS 67570-0068

Dear Councilwoman Belden:

Ed Markel, former State Representative Robert Krebhiel, and you met with Secretary Moser on June 10, 2014, to discuss the City of Pretty Prairie's drinking water nitrate issues and possible alternatives to avoiding the high cost of treatment. The main alternatives discussed included source water protection and searching for a new source of water.

Source water protection alone is not a viable option to address Pretty Prairie's nitrate issues at this point since the nitrate levels for the city's water are around 20 mg/L, twice the MCL. We believe this is also borne out in the Whittemore study where it is stated it could be difficult to bring the nitrate levels down to below the nitrate MCL.

Source water protection is a good process to put into place when communities are still below the MCL and seeing a steady rise in nitrate levels. If actively implemented before nitrate levels reach the MCL a community may be able to avoid the need to locate a new source or install treatment.

KDHE approved a similar program for the city, the wellhead protection program, in 1995 which has proven to be unsuccessful in controlling source water nitrate levels. Between 2003 and 2004, KDHE offered additional assistance for both source water protection activities and financial planning and the city declined the offer.

We do recommend an active source water protection program be implemented with the currently proposed treatment project. By helping to moderate source water nitrate levels, an actively implemented source water protection program will likely help the community ultimately reduce operation and maintenance costs. It will also eliminate costs associated with the potential installation of additional treatment capacity should nitrate levels continue to increase if nothing is done.

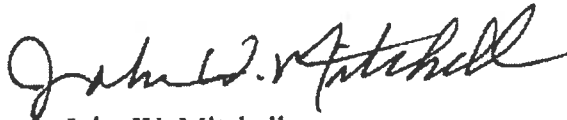
Searching for and finding a good groundwater source close enough to the city to be a viable option appears to be highly unlikely based on the nitrate levels of existing wells in the area. The city already tried this option once which resulted in the construction of the city's current active source, Well #5. We don't believe the resources the city would spend to locate and construct a new well, even if a satisfactory source could initially be found, would result in a long term solution to the city's high nitrate problems.

Though to date we haven't received the final PER (Preliminary Engineering Report), based on the information presented at the June 10, 2014, KIAC meeting, ion exchange treatment appears to be the best solution for the city to address the high nitrate levels.

We understand that the project discussed at the KIAC (Kansas Interagency Advisory Council) also included costs for other infrastructure including replacing the 1919 vintage water tower and sand-cast iron water mains. Understandably, the total estimated 4.6 million dollar project is a considerable amount for a community like Pretty Prairie. Though final financing numbers still need to be run and presented to the city, we believe that 50% or more of the total project could possibly be financed with a combination of CDBG and RD grants and SRF principal forgiveness.

Two million dollars is still a considerable amount for a community the size of Pretty Prairie to have to spend on water treatment though the city has had two decades to plan and properly address the matter. The Kansas Department of Health and Environment continues to be available to assist the city with the process of implementing a long term solution to the city's drinking water high nitrate issue.

Sincerely,

A handwritten signature in black ink, appearing to read "John W. Mitchell". The signature is fluid and cursive, with the first name "John" being the most prominent part.

John W. Mitchell
Director, Division of Environment

JWM:DRP:lw

pc: Mike Tate, Director, BOW
Darrel Plummer, Section Chief, BOW/PWS
South Central District

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Article No.:

Davide Waldo, ~~TITLE~~Chief
Public Water Supply Section
Kansas Department of Health and Environment
SECTION
1000 SW Jackson Suite 420ADDRESS
Topeka, KS 66612ZIP

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Dear Mr. Waldo:

Re: Public Water Systems Out of Compliance for Nitrates
Pretty Prairie Public Water System
PWS ID: KS2015501

~~This letter is to inform you of the U.S. Environmental Protection Agency's (EPA's) intent to address Public Water Systems (PWSs or Systems) in Kansas that are in chronic exceedance of the federal maximum contaminant level (MCL) for nitrates. The State of Kansas has enacted nitrate MCL regulations which are at least as stringent as the federal National Primary Drinking Water Regulations (NPDWR). The nitrate MCL in Kansas, which is set at 10 parts per million (ppm or mg/L), has become one of EPA's high priorities to ensure that noncompliant Systems are progressing towards compliance in a timely manner.~~

~~EPA Region 7~~We recently received correspondence from the city of Pretty Prairie, because its System has a documented, which has a documented history of exceeding the 10 ppm nitrate MCL. ~~EPA~~We has provided the Kansas Department of Health and the Environment (KDHE) you with a copy of our agency's response to the city of Pretty Prairie, dated May 16, 2008, in deference to KDHE as the primacy agency for enforcement of drinking water violations in Kansas. In our May 16th letter to the city of Pretty Prairie about its System, ~~we~~EPA clarified that the provision of bottled water to the public is not an acceptable long-term solution to nitrate violations, and does not exempt its System from the SDWA requirement to comply with the nitrate MCL.

~~We~~EPA notified the city of Pretty Prairie that our agency expects the Pretty Prairie PWS to work with KDHE to take decisive action to come into compliance with the nitrate MCL. Such actions should include, at a minimum, entering into a compliance agreement, which will include an enforceable schedule for the Pretty Prairie PWS to come into compliance with the nitrate MCL.

~~EPA~~We suggests that it would be ideal for KDHE to have such an agreement in place with Pretty Prairie by no later than September 30, 2008, absent extenuating circumstances that make such a goal impractical. Such a compliance agreement between Pretty Prairie and the KDHE should promote measurable progress towards compliance, via the inclusion of clear milestones, an expected compliance date, and clearly-stated consequences for failure to adhere to the schedule. We also suggest that the agreement should require Pretty Prairie PWS to achieve compliance with the nitrate MCL as soon as reasonably practicable. Please notify EPA once Pretty Prairie has been given measurable milestones and a date to return to compliance with the nitrate MCL, but no later than December 31, 2009.

~~[Insert paragraph about EPA's view of nitrate noncompliant systems generally—should be under enforceable compliance orders with schedules that include steps to be taken to come into compliance. Is EPA going to be reviewing nitrate violators in KS? If so, then state clearly that it is an enforcement priority and lay out our expectations—this is something to discuss with your management.....]~~

EPA has reviewed a letter from the city of Pretty Prairie, dated April 16, 2008; as well as a copy of the Consent Order (96-E-0263) that the city of Pretty Prairie entered into with KDHE on October 15, 1996; and a copy of the KDHE Directive sent to the city of Pretty Prairie on July 20, 2007. EPA is willing to partner with KDHE to put an enforcement mechanism in place that will ensure the Pretty Prairie PWS achieves compliance to protect the consumers of its drinking water system, as soon as reasonably practicable.

~~We both have the~~EPA's goal is to resolve the nitrate MCL violations in all drinking water systems in Kansas. Our agency's current priority is the long-term nitrate violations, which include the Pretty Prairie PWS, based on the pattern of noncompliance, and the lack of implementation to fully address the cause of the nitrate MCL violations following the recommendations of the feasibility study.

EPA advised the city of Pretty Prairie that failure to comply with the requirements of the nitrate MCL, and thereby the SDWA, would lead to an enforcement action by KDHE or EPA. Failure to comply with the SDWA, including submitting the plans necessary to implement the recommendations of the feasibility study, may subject the system to an enforcement action brought by KDHE and/or EPA under the authority of the NPDWR and SDWA. In any such action, the EPA may seek enforcement as well as possible penalties, in addition to requiring compliance with the SDWA and applicable regulations. If for any reason KDHE does not exercise their enforcement authority in a timely manner, EPA reserves the right to take enforcement action.

We recognize that systems often cite funding shortfalls as a reason for failure to meet one or more requirements of an enforceable compliance schedule. Systems making the claims of insufficient funds or economic hardship must take steps, within a compliance schedule, to supply documentation supporting such claims.

~~Unsubstantiated claims of insufficient funds or economic hardship are insufficient reasons to excuse failure to progress towards compliance with the requirements of the Safe Drinking Water Act. Furthermore, failure to seek adequate funding, whether through tax levies, utility rate increases, or submissions of grant proposals, is not adequate justification for failure to meet the terms of an enforcement agreement, compliance schedule, or otherwise fail to show consistent progress towards compliance with the SDWA. Please note that each System's responsibility to come into compliance with the statutory and regulatory requirements of the SDWA does not end with a demonstration of economic hardship.~~

~~Should KDHE desire assistance in determining whether any Systems in Kansas have adequately demonstrated a fiscal inability to comply with the requirements of the SDWA, it may wish~~We encourage you to utilize the resources of the Region 7 Satellite Environmental Finance Center (SEFC), an organization associated with Boise State University which assists local governments with expanding their approach to environmental financing. The SEFC may be able to provide assistance to KDHE to more effectively determine whether Systems have the funds to install treatment, and also to help identify additional funding streams available to Systems. Additional information regarding the SEFC can be found on the internet at <http://efc.boisestate.edu/efc/>.

~~Please note that each System's responsibility to come into compliance with the statutory and regulatory requirements of the SDWA does not end with a demonstration of economic hardship. Each system which demonstrates a compelling economic factor as a reason for the system's inability to comply with an MCL or treatment technique requirement in timely fashion, or to implement measures to develop an alternative source of water supply may qualify for a variance or an exemption from an MCL or treatment technique requirement, provided certain conditions are met. For more on the requirements for Systems to be granted a variance or an exemption, see Sections 1415 and 1416 of the SDWA, 42 U.S.C. §§ 300g-4 and 300g-5.~~

If you have any questions regarding these issues, please contact Stacie Tucker, of my staff, at (913) 551-7715069.

Sincerely,

Diane Huffman~~Mary Mindrup~~, Chief
Water Enforcement Branch~~Drinking Water Branch~~
Water, Wetlands and Pesticides Division

bcc: Monica Wurtz, WWPD/DRWM
Robert Dunlevy, WWPD/DRWM

CONCURRENCE:WWPD:WENF:Tucker:H:\WENF\2008 Correspondence\Tucker\ EPA Ltr to KDHE about Pretty Prairie Nitrate Ltr 5.15.08.doc						
NAME	Tucker	Wurtz	Dudding	Mindrup	Huffman	
DIV/ BRANCH	WWPD/ WENF	WWPD/ DRWM	CNSL	WWPD/ DRWM	WWPD/ WENF	
SIGN						
DATE						

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Article No.:

Honorable Curt Miller
Mayor of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

Dear Mayor Miller:

Re: Pretty Prairie Public Water System
PWS ID: KS2015501

This letter is a response to correspondence dated April 16, 2008 sent to the United States Environmental Protection Agency, Region VII (EPA) by the city of Pretty Prairie, KS, regarding your request for a meeting related to addressing the issue of ongoing nitrates violations at the Pretty Prairie Public Water System (PWS or system) and the actions taken by the Kansas Department of Health and Environment on this matter.

The State of Kansas has enacted regulations which are at least as stringent as the federal National Primary Drinking Water Regulations (NPDWR), and has primary enforcement authority for the federal drinking water requirements in Kansas, through the Kansas Department of Health and the Environment (KDHE). EPA encourages the city of Pretty Prairie to work with the KDHE to take decisive action to come into compliance with the nitrate MCL.

A Public Water System is required by the federal Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f et seq., to comply with the ~~National Primary Drinking Water Regulations (NPDWR)~~. The NPDWR sets out Maximum Contaminant Levels (MCLs) for various contaminants, which are the highest levels at which a contaminant may be legally allowed in water provided to the public. The MCL for nitrate is 10 parts per million (ppm or mg/L).

The Pretty Prairie PWS has a documented history of exceeding the 10 ppm nitrate MCL. Ongoing violations of the nitrate MCL increases consumer exposure to the public health risks associated with nitrate and consequently must be addressed by reducing the level of nitrates in the water supplied by the system. As EPA ~~has noted in~~ previously described in our correspondence of February 4, 2008 with Pretty Prairie, provision of bottled water to the public by a PWS, while an acceptable temporary measure to avoid unreasonable risk to health, does not exempt a PWS from its legal requirement to comply with the nitrate MCL.

The State of Kansas has enacted regulations which are at least as stringent as the federal NPDWR, and has primary enforcement authority for the federal drinking water requirements in Kansas, through the Kansas Department of Health and the Environment (KDHE). Accordingly, the EPA is referring your request for a meeting on the nitrate violations to the KDHE. EPA encourages the city of Pretty Prairie to work with the KDHE to take decisive action to come into compliance with the nitrate MCL. Such action should include, as a minimum, entering into an agreement with KDHE, by no later than September 30, 2008, which will enact a mutually acceptable schedule for Pretty Prairie PWS to come into compliance with the nitrate MCL.

The EPA expects that such a compliance agreement between Pretty Prairie and the KDHE will promote measurable progress towards compliance, by the inclusion of clear milestones, an expected compliance date, and enforceable consequences for failure to adhere to the schedule. The Pretty Prairie PWS should achieve compliance with the nitrate MCL as soon as reasonably practicable, but no later than December 31, 2009. Failure to comply with the nitrate MCL, including failure to take required steps towards compliance, may subject the system to legal action by KDHE and/or EPA seeking civil penalties and/or injunctive relief requiring compliance.

EPA thanks Pretty Prairie for its efforts in exchanging information. If you have any questions regarding these issues, please contact Stacie Tucker, of my staff, at (913) 551-7715.

Sincerely,

William A. Spratlin
Chief
Water Enforcement Branch
Water, Wetlands and Pesticides Division

cc: Dave Waldo, Kansas Department of Health and Environment

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bcc: Monica Wurtz, WWPD/DRWM

CONCURRENCE:WWPD:WENF:Tucker:H:\WENF\2008 Correspondence\Tucker\ Ltr to Pretty Prairie re Nitrates Issue 5.9.08.doc						
NAME	Tucker	Wurtz	Dudding	Mindrup	Huffman	Spratlin
DIV/ BRANCH	WWPD/ WENF	WWPD/ DRWM	CNSL	WWPD/ DRWM	WWPD/ WENF	WWPD
SIGN						
DATE						

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

RECEIVED

IN THE MATTER OF:

CASE No. 96-E-0263

DEC 19 2007

CITY OF PRETTY PRAIRIE, KANSAS
PUBLIC WATER SUPPLY ID #T4000

BUREAU OF WATER

COMPLIANCE WITH K.A.R 1995 SUPP. 28-15-13(b),
ADMINISTRATIVE ORDER CASE No. 91-E-71,
PROCEEDING UNDER K.S.A. 1995 SUPP. 65-163

CONSENT ORDER

I. PRELIMINARY STATEMENT

The Kansas Department of Health and Environment (KDHE) and the City of Pretty Prairie (City), having agreed that settlement of this matter is in the best interest of all parties and the public, hereby represent and state as follows:

II. STATUTORY AUTHORITY

1. KDHE is a duly authorized agency of the state of Kansas, created by an act of the legislature. KDHE has general jurisdiction over matters involving public water supply and protection of public health under the authority of K.S.A. 1995 Supp. 65-163 *et seq.* The following Findings of Fact and Conclusions of Law are made and Consent Order issued under the authority vested in the Secretary of the Kansas Department of Health and Environment (Secretary) by K.S.A. 1995 Supp. 65-163.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

2. The City operates a public water supply system as defined by K.S.A. 65-162a. A public water supply system is defined as "a system for the provision to the public of piped water for human consumption, if such system has at least ten (10) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. Such term includes any source, treatment, storage or distribution facilities under control of the operator of the system and used primarily in connection with the system, and any, source, treatment storage or distribution facilities not under such control but which are used in connection with such system."

3. K.S.A. 65-171m states in part, "The secretary of health and environment shall adopt rules and regulations for the implementation of this act. In addition to procedural rules and regulations, the

secretary may adopt rules and regulations providing for but not limited to: (a) primary drinking water standards applicable to all public water supply systems in the state. The primary drinking water standards may: (1) identify contaminants which may have an adverse effect on the health of persons; (2) specify for each contaminant either a maximum contaminant level that is acceptable in water for human consumption, ..."

4. K.S.A. 1995 Supp. 65-163 states in part: "(2) Whenever an investigation of any public water supply system is undertaken by the secretary, it shall be the duty of the supplier of water under investigation to furnish to the secretary information to determine the sanitary quality of the water supplied to the public and to determine compliance with applicable state laws and rules and regulations. The secretary may issue an order requiring changes in the source or sources of the public water supply system or in the manner of storage, purification or treatment utilized by the public water supply system before delivery to consumers, or distribution facilities, collectively or individually, as may in the secretary's judgment be necessary to safeguard the sanitary quality of the water and bring about compliance with applicable state law and rules and regulations. The supplier of water shall comply with the order of the secretary."

5. As authorized by K.S.A. 65-171m, the secretary adopted a maximum contaminant level (MCL) for nitrate of 10 mg/l, measured as N, at K.A.R. 1995 Supp. 28-15-13(b).

6. Administrative order, Case No. 89-E-10 was issued to the City by KDHE on February 13, 1989. This order contained a schedule of actions for the City to follow to return to compliance with the nitrate MCL. This order was not appealed and became a final order of the Secretary.

7. On October 28, 1990, Administrative Order No. 90-E-71 was issued to the City for failure to comply with Administrative Order No. 89-E-10. Administrative Order No. 89-E-10 was included by reference. Administrative Order No. 90-E-71 assessed penalties of \$12,675 for failure to comply with Administrative Order No. 89-E-10. This Order was timely appealed.

8. On October 24, 1991, the City and KDHE entered into Consent Order No. 91-E-71. Administrative Orders 89-E-10 and 91-E-71 were included by reference. Under the Consent Order, the City waived its appeal of Administrative Order No. 90-E-71 and agreed to pay \$675 in civil penalty. The remaining penalty was dismissed on the condition that the City comply with a schedule to comply with the nitrate MCL.

9. In partial response to the consent agreement, the City constructed Well No. 5, which was placed into operation in November of 1994. At this time, Wells No. 3 and 4 were removed from service, and the City relied entirely on Well No. 5.

10. The nitrate levels in Well No. 5 have been as high as 11.31 mg/l in samples analyzed in the KDHE laboratory.

11. The City has expressed an interest in proceeding with a wellhead protection plan to protect the quality of water in the Pretty Prairie area, and to lower ambient groundwater nitrate levels.

12. K.S.A. 65-171r prohibits the following acts: "(c) the failure of a supplier of water under investigation to furnish information to the secretary under K.S.A. 65-163, and amendments thereto; (d) the failure of a supplier of water to comply with any final order of the secretary issued under the provisions of K.S.A. 65-163 or 65-163a, and amendments thereto; (e) the failure of a supplier of water to comply with a primary drinking water standard established under K.S.A. 65-171m, and amendments thereto unless a variance or exception has been granted;"

13. K.S.A. 65-171s states in part: "Any person who violates any provision of K.S.A. 65-171r shall incur, in addition to any other penalty provided by law, a civil penalty in an amount not more than \$5,000 for each violation."

IV. CONSENT ORDER

14. Therefore, based on the above and pursuant to K.S.A. 1995 Supp. 65-163, the Secretary hereby orders and the City hereby consents to comply with the following Schedule of Actions.

Schedule of Actions

15. The city shall test each point of entry to its distribution system for nitrate at least quarterly, using the KDHE laboratory, or a KDHE-certified laboratory. The City shall increase the sampling frequency to either monthly or weekly if directed to do so by KDHE. Results shall be submitted to KDHE by the 10th day of January, April, July, and October summarizing the results of all samples taken and analyzed in the previous quarter.

16. When the test results indicate the nitrate levels exceed the MCL of 10 mg/l, the City shall take the following actions:

a. Issue public notice on a quarterly basis as required by K.A.R. 1995 Supp. 28-15-15a. Copies of the notice shall be furnished to all area health care providers including medical doctors, clinics, hospitals, and the Reno County Health Department. Copies shall also be provided to day care centers and commercial establishments serving the traveling public, and posted in any roadside parks served by the City water system.

b. The City shall provide free of charge, an alternate source of drinking water for all infants less than six months of age, mothers nursing infants less than six months of age, and pregnant women. The drinking water provided must meet the requirements of K.A.R. 28-15-13. If bottled water is chosen to meet this requirement, the City shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the FDA concerning the source of the water and monitoring of water quality.

17. The City shall adopt and implement its wellhead protection program according to the following schedule. The wellhead protection program shall conform with the Kansas Wellhead Protection Program. A progress report shall be submitted to KDHE within 10 days of the dates outlined in the schedule.

a. The city shall complete delineation of the wellhead protection area no later than March 31, 1997.

b. The city shall complete an inventory of existing and potential pollution sources within the wellhead protection area no later than June 30, 1997.

c. The city shall complete development of management strategies for the existing and potential pollution sources identified above, with particular emphasis given to sources of nitrate contamination of the groundwater, no later than September 30, 1997.

d. The city shall submit its wellhead protection plan to KDHE for review by October 31, 1997.

e. The city shall adopt and implement its wellhead protection plan no later than December 31, 1997.

18. If nitrate levels exceed 15 mg/l in two of three consecutive quarters, upon notice by KDHE, the City will obtain or prepare a formal feasibility study, including cost estimates, of obtaining a new source of water, blending existing sources of water to produce acceptable quality of water, purchasing water of acceptable quality from a neighboring public water supplier, providing treatment to reduce the nitrate concentration to an acceptable level, or any combination of these options. The City shall submit the feasibility study to KDHE within twelve months of receiving notice from KDHE.

19. If nitrate levels exceed 20 mg/l in two of three consecutive quarters, this consent agreement will be revised to include a schedule requiring the City to implement an option identified in paragraph 18 above.

20. The City shall submit quarterly reports to KDHE discussing its progress in each of the following areas as appropriate: implementing the wellhead protection program required in paragraph 17 above; completing the feasibility study required in paragraph 18 above, or implementing the option selected according to paragraph 19 above.

V. OTHER PROVISIONS

21. All actions required to be undertaken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. In any action by KDHE to enforce the terms of this Consent Order, the City agrees not to contest the authority or jurisdiction of the Secretary of Health and Environment to issue this Consent Order.

22. This Consent Order shall apply to and be binding upon KDHE and the City, its agents, successors, and assigns. No change in the ownership or corporate status of the City shall alter its responsibilities under this Consent Order.

23. The City shall provide a copy of this Consent Order to any subsequent owners or successors before ownership rights are transferred. The City shall provide a copy of this Consent Order to all contractors, sub-contractors, and consultants which are retained to conduct any work performed under this Consent Order, within 14 days after the effective date of this Consent Order or the date of retaining their services. Notwithstanding the terms of any contract, the City is responsible for compliance with this Consent Order and for insuring that its contractors and agents comply with this Consent Order.

24. The activities conducted under this Consent Order are subject to approval by KDHE, and the City shall provide all appropriate necessary information consistent with this Consent Order requested by KDHE.

25. The City agrees to meet every term and condition of this Consent Order. Failure to meet the terms and requirements of the Schedule of Actions for improvements, or any term or condition of, or scheduled date of performance in this Order, or any report, work plan or other writing prepared pursuant to and incorporated into this Order, shall constitute a violation of this Consent Order and may subject the City to further enforcement action including but not limited to the assessment of civil penalties not to exceed \$5,000 per day for each day in which such violation occurs or failure to comply continues.

26. The provisions of this Consent Order shall terminate upon the receipt by the City, of written notice from KDHE that the City has demonstrated that the terms of this Consent Order, including any additional tasks which KDHE has determined to be necessary, has been satisfactorily completed. Failure to complete the Schedule of Actions for improvements by the specified dates will subject the City to further enforcement action.

27. (a) The City shall perform the requirements under this Consent Order within the time limits set forth herein unless, the performance is prevented or delayed solely by events which constitute a force majeure. For purposes of this Consent Order a force majeure is defined as any event beyond the control of the City which could not be overcome by due diligence and which delays or prevents performance by a date required by this Consent Order. Such events do not include increased costs of performance or changed economic circumstances. Any delay caused in whole or in part by action or inaction by federal or state authorities shall be considered a force majeure and shall not be deemed a violation of any obligations required by this Consent Order.

(b) The City shall have the burden of proving all claims of force majeure. Failure to comply by reason of force majeure shall not be construed as a violation of this Consent Order.

(c) The City shall notify KDHE in writing within seven days after becoming aware of an event which the City knew, or should have known, constituted force majeure. Such notice shall estimate the anticipated length of delay, its cause, measures to be taken to minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this section shall constitute a waiver of the City's right to assert a force majeure claim and shall be grounds for KDHE to deny the City an extension of time for performance.

(d) Within seven days of the receipt of written notice from the City of a force majeure event, KDHE shall notify the City of the extent to which modifications to this Consent Order are necessary. In the event KDHE and the City cannot agree that a force majeure event has occurred, or if there is no agreement on the length of the extension, the dispute shall be resolved by the Director of Environment under the Dispute Resolution Procedure provided herein.

(e) Any modifications to any provision of this Consent Order shall not alter the Schedule For Improvement or completion of other tasks required by this Consent Order unless specifically agreed to by the parties in writing and incorporated into this Consent Order.

28. This Consent Order may be amended by mutual agreement of KDHE and the City. Such amendments shall be in writing, shall have as their effective date the date on which they are signed by both parties and shall be incorporated into this Consent Order.

29. Dispute Resolution Procedure

(a) The parties recognize that a dispute may arise between them regarding implementation of the action to be taken as herein set forth or other terms or provisions of this Consent Order. If such dispute arises, the parties will endeavor to settle it by informal negotiations between themselves. If the parties cannot resolve the issue informally within a reasonable period of time, either of the parties may notify the other in writing stating specifically that informal negotiations have failed, that formal dispute resolution under this paragraph has commenced and stating its position with regard to the dispute and the reason therefore. A party receiving such a notice of dispute will respond in writing within ten (10) working days stating its position. The parties shall have an additional ten (10) working day period to prepare written arguments and evidence for submission to the other party. Any settlement shall be reduced to writing, signed by representatives of each party and incorporated into the Consent Order. If the parties are unable to reach an agreement following this procedure, the matter shall be referred to the Director of the Division of Environment, KDHE, who shall decide the matter and provide a written statement of his decision which shall be incorporated into the Consent Order.

(b) This dispute resolution procedure shall not preclude any party from having direct recourse to court if otherwise available by applicable law.

30. The requirements of this Consent Order represent the best professional judgement of KDHE at this time based on the available information. If circumstances change significantly so that data indicates an immediate threat of danger to the public health or safety or the environment or a significantly different threat other than the alleged deficiencies addressed herein, then KDHE reserves the right to modify dates or requirements herein as it deems reasonably necessary and the City reserves the right to appeal any such modifications or additional requirements.

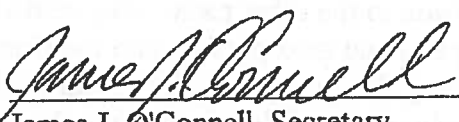
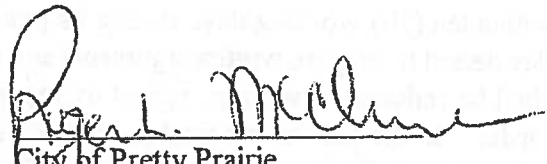
31. Nothing contained in this Consent Order shall affect any right, claim, interest, defense, or cause of action of any party hereto with respect to any person or entity not a party to this Order. This Order does not constitute a waiver, suspension, or modification of the requirements of applicable statutes or regulations which remain in full force and effect.

32. The parties hereto have affixed their signatures on the dates inserted below to acknowledge their agreement to this Consent Order. The signatories to this Consent Order certify that they are authorized to execute and legally bind the parties they represent to this Consent Order.

33. KDHE reserves the right to cancel or modify this agreement if new information concerning the health effects of nitrate is discovered.

34. Upon execution of this Consent Agreement, Case No. 91-E-71 is dismissed.

IT IS SO AGREED.


James J. O'Connell, Secretary
Kansas Department of Health
and Environment
City of Pretty Prairie

Dated: 15 Oct 96

Dated: 10-01-96



Kelly

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

DIRECTIVE

July 20, 2007

Curt Miller, Mayor
City of Pretty Prairie
119 West Main
PO Box 68
Pretty Prairie, Kansas 67570

Re: Public Water Supply: Nitrate MCL Non-Compliance
Federal ID No.: KS2015501
State ID No.: T4000

Dear Mayor Miller and City Council Members:

Drinking water delivered by the city of Pretty Prairie from Well 05/Treatment Plant 001 (Site ID #00123378) to its customers continues to exceed the maximum contaminant level (MCL) of 10 mg/L established for nitrate. The exceedance of the nitrate MCL has resulted in continuous violation of K.A.R. 28-15a-62. A summary of monitoring results is attached to this Directive.

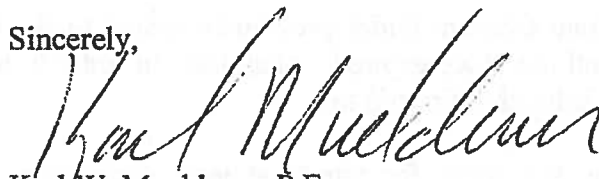
A Nitrate Consent Order previously issued to the City on August 20, 1996 did not result in compliance and has since expired. Therefore, in order to address the continued violations, the city of Pretty Prairie is hereby directed to:

1. Sample the water for nitrate at least once every three months (quarterly). The sampling frequency shall be increased to either monthly or weekly if instructed to do so in writing by KDHE. The City may use the KDHE laboratory or a KDHE-certified private laboratory for analysis. If a private laboratory is used, nitrate results shall be submitted to KDHE - Bureau of Water by the 10th day of January, April, July and October for the previous quarter.
2. When test results indicate the nitrate levels exceed the MCL of 10 mg/L at the point of entry, the city of Pretty Prairie shall take the following actions:
 - a. Issue public notice to all customers served as soon as possible within 24 hours in accordance with K.A.R. 28-15a-202. Copies of the notice shall be furnished to the county health department. A copy of the notice is also required to be submitted to the KDHE within 10 days of delivering such notice to your customers.

- b. Provide, free of charge, an alternate source of drinking water for all infants less than six months of age, mothers who are nursing infants less than six months of age, and pregnant women. The drinking water provided must meet the requirements of K.A.R. 28-15a-23. If bottled water is chosen to meet this requirement, the city of Pretty Prairie shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the U.S. Food and Drug Administration (FDA).
3. The city of Pretty Prairie shall obtain the services of a Kansas-licensed professional engineer to prepare a formal feasibility study, including cost estimates to comply with the nitrate MCL. The city of Pretty Prairie shall submit the Feasibility Study to the KDHE by **December 20, 2007**. The city of Pretty Prairie and the KDHE will jointly review the results of the feasibility study and determine a course of action. At a minimum, the feasibility study shall address the following options:
 - a. Obtaining a new source of raw water,
 - b. Obtaining water of acceptable quality from another public water supply,
 - c. Treatment options to reduce nitrate, including the feasibility of blending existing sources of water to produce acceptable quality water, and
 - d. If a new source can be obtained, minimizing the use of, or removing from service, the individual water well causing the problem.

Please submit the above mentioned items to the KDHE; Public Water Supply Section at 1000 SW Jackson, Suite 420; Topeka, KS 66612 as indicated. If you have any questions or need any assistance regarding this matter, please contact Kelly Kelsey at (785) 296-6297.

Sincerely,



Karl W. Mueldener, P.E.
Director, Bureau of Water

Attachment

KWM:kdK

pc: Reno County Health Department
KDHE-SCDO
DRP/PJC/DCS/1.0 File

ATTACHMENT

Nitrate results in red bold type are in violation of the MCL.

SUMMARY OF NITRATE RESULTS 1995 – Present

FEDERAL ID	SYSTEM NAME	COLLECT DATE	ANALYTE	RESULT	UNIT
KS2015501	PRETTY PRAIRIE, CITY OF	June 19, 2007	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 13, 2007	NITRATE	14	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 1, 2006	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 20, 2006	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	January 10, 2006	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	October 12, 2005	NITRATE	7	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 1, 2005	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 31, 2005	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	February 14, 2005	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	December 6, 2004	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 23, 2004	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 12, 2004	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	February 23, 2004	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 7, 2003	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 25, 2000	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 24, 2000	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	January 31, 1997	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 16, 1996	NITRATE	16	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 16, 1996	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 26, 1996	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 26, 1996	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	October 25, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 27, 1995	NITRATE	14	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 26, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	July 28, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 28, 1995	NITRATE	16	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 28, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 19, 1995	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 19, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	15	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	16	MG/L



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

OCT 18 2013

The Honorable Michael B. Seyb
Mayor
Pretty Prairie
119 W Main
P.O. Box 68
Pretty Prairie, Kansas 67570-0068

Dear Mayor Seyb:

The purpose of this letter is to call your attention to the matter of the drinking water in the city of Pretty Prairie. As you are aware, for a period of nearly 20 years, the city's drinking water has exceeded the Environmental Protection Agency's standard for nitrates. Based on monitoring data that the water system has provided to the Kansas Department of Health and Environment, it appears that the nitrate level in the city's drinking water is continuing to increase.

Given our common interest in protecting the health of the citizens of Pretty Prairie, the EPA wishes to begin discussions with you to find and implement a permanent solution to address the nitrates in Pretty Prairie's drinking water.

We understand that Pretty Prairie has made a number of attempts at working with both the EPA and the KDHE to address this important water quality issue in the past. We must emphasize, however, that the approach of using bottled water as a permanent solution to address nitrates in drinking water consumed by infants and pregnant/nursing mothers, is inconsistent with the National Primary Drinking Water Regulations. Because the nitrate level in your water continues to increase, the risk to individuals exposed to this acute contaminant also increases.

We are unaware of any specific actions that Pretty Prairie has initiated over the past several years to abate the nitrates in its drinking water. If the city has taken any actions or is planning to take any actions to reduce nitrate levels in its drinking water to meet the EPA's Maximum Contaminant Level of 10 mg/L, please advise the EPA of those actions. The EPA's goal is to ensure that the city takes action within a reasonable time frame to address the nitrate contamination in its water.

The EPA would like to meet with you to discuss this matter. It is our intention to invite representatives of the KDHE to participate in any such meeting. Please Scott Marquess, of my staff, at (913) 551-7131 to discuss a meeting.

Sincerely,

A handwritten signature in black ink, appearing to read "Diane L. Huffman".

Diane L. Huffman

Chief

Water Enforcement Branch

cc: Darrel Plummer, KDHE



Printed on Recycled Paper

Honorable Curt Miller
Mayor of City of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

Dear Mayor Miller:

Re: Use of Bottled Water Under the Safe Drinking Water Act (SDWA)

It has been brought to the attention of the U.S. Environmental Protection Agency (EPA), Region VII, through the Kansas Department of Health and the Environment (KDHE) that Pretty Prairie is seeking clarification of the use of bottled water to achieve compliance with provisions of the SDWA. Under the SDWA, bottled water is allowed for use in very limited situations, such as in emergency situations or as a temporary measure under variances and exemptions. However, bottled water is prohibited for use by a public water system to achieve compliance with the Maximum Contaminant Level (MCL); 40 CFR § 141.101 reads "Public water systems shall not use bottled water to achieve compliance with an MCL. Bottled water may be used on a temporary basis to avoid unreasonable risk to health."

The city's of Pretty Prairie drinking water system has a long history of exceeding the MCL for nitrates under the SDWA and must come into compliance with the MCL as soon as possible. Because bottled water cannot be used to achieve compliance with MCL, EPA strongly encourages the city of Pretty Prairie to work with KDHE and take additional measures to come into compliance.

If you have any questions, please contact Mary Tietjen-Mindrup, Chief, Drinking Water Management Branch, at (913) 551-7431.

Sincerely,

William A. Spratlin
Director
Water, Wetlands and Pesticides Division

cc: Dave Waldo
KDHE

Wurtz

Mindrup

Spratlin

01/ /08

01/ /08

01/ /08



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 04 2008

Honorable Curt Miller
Mayor of City of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

Dear Mayor Miller:

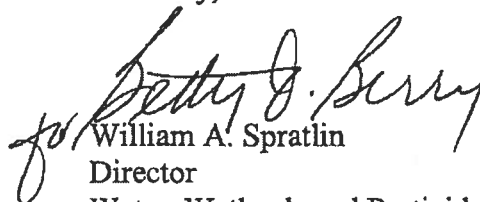
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Sincerely,


William A. Spratlin
Director
Water, Wetlands and Pesticides Division

cc: Dave Waldo
KDHE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 04 2008

Honorable Curt Miller
Mayor of City of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

Dear Mayor Miller:

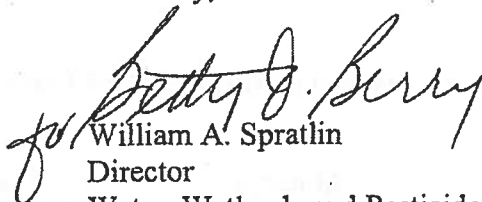
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Sincerely,


William A. Spratlin
Director
Water, Wetlands and Pesticides Division

cc: Dave Waldo
KDHE

Honorable Curt Miller
Mayor of City of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

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Sincerely,

William A. Spratlin
Director
Water, Wetlands and Pesticides Division

cc: Dave Waldo
KDHE

WWPD/DRWM:Wurtz:MCx7490:01-30-08:H:DRNK/2008 Correspondence/Wurtz/Pretty Prairie.doc

Wurtz

Monica Wurtz

01/30/08

Mindrup

MJ Mindrup

01/30/08

WAS Spratlin
AB

02/04/08

Brune, Doug

From: Darrel Plummer <DPlummer@kdheks.gov>
Sent: Wednesday, May 22, 2013 6:43 PM
To: Marquess, Scott
Cc: Jonathan Haynes; Dan Clair; Cathy Tucker-Vogel; Mike Tate; Don Carlson; Brune, Doug; Jim Taft
Subject: Discuss ETT status issues w/ Scott

Scott,

"Other than Pretty Prairie, I would just like clarification on the plan for enforcement at these PWSs." (your quote.)

I believe KDHE turned the enforcement for Pretty Prairie over to EPA years ago. It's hard to get too excited about taking action against systems under 1,000 population with MCL violations, and harder for me to justify such action, as long as EPA allows a community of over 600 with an acute nitrate violation, (latest nitrate level 18.6 mg/L), to continue to languish on the EPA Drinking Water compliance/enforcement action listing without any action being initiated by EPA.

One of KDHE's most recent actions was to Timken, KS, a community of less than 75 people with combined uranium levels averaging between 30-32 ug/L. Considering the cost of treatment, at this point Timken's best option may be to cost/share the drilling of individual private water wells, provided they could find financing for such a program, and get out of the public water supply business. Such a solution won't help public health but it will take them off the ETT list.

The majority of these systems realize they have compliance problems; it is not that they don't want to comply, in most cases they just don't have the resources necessary to properly address the issue. Providing these systems with grants to build the necessary infrastructure or treatment does not help them when they don't even have the resources to maintain their current infrastructure and treatment let alone any additional.

That all said...we have got to find better, less costly, solutions to bring these small aging/dying communities into compliance with drinking water rules...or just decide to ignore them, like Pretty Prairie, until the communities just fade away.

Darrel R. Plummer
Chief, Public Water Supply Section
Kansas Dept. of Health and Environment
Bureau of Water - Public Water Supply Section
1000 SW Jackson; Suite 420
Topeka, KS 66612
Phone: (785) 296-5523
Fax: (785) 296-5509

From: Marquess, Scott [mailto:Marquess.Scott@epa.gov]
Sent: Wednesday, May 22, 2013 5:22 PM
To: Darrel Plummer
Cc: Jonathan Haynes; Patti Croy; Cathy Tucker-Vogel; Brune, Doug
Subject: RE: Discuss ETT status issues w/ Scott

Darrel,

Attached is a summary I assembled several weeks ago based on your Q1 responses to the ETT list. It's a little out of date, and does not reflect anything on the April ETT.

The summary has the following headers, and it would probably be good to tackle each of them as follows:

AO in Process – Would like to confirm AOs that have been issued. Might be good to get effective dates, but I can get that from SDWIS

AO Proposed – Date??? – Would like to know the schedule for issuing AOs to systems where AOs are pending per the ETT response.

Work Underway – No Order – I think these are systems where KDHE believes that the PWS is “On the Path” and that work is adequately progressing, however, there is no Order in place. We should discuss how to proceed with these systems and determine whether any EPA action is warranted or may be beneficial.

Status Unclear – Other than Pretty Prairie, I would just like clarification on the plan for enforcement at these PWSs.

RTC – Probably no need to discuss these systems, unless there’s something you think we should talk about.

See you tomorrow morning. FYI, Doug will be joining me.

Thanks
Scott

Douglas J. Brune
January 6 – 10, 2014

Meetings/Training

- Jan 7 and 8th - Energy Efficiency at Water and Wastewater Facilities webinar, Region 4
- Jan 8 – Water Security Training from HQ for Region 7 meeting
- Jan 9 – DRWM Branch meeting
- Jan 10 - Phase II/V Implementation Workgroup Conference call (cancelled)

Upcoming Meetings

- Jan 14 (2nd Tuesday of each month) - m-DBP Workgroup monthly teleconference
- Jan 14 - Sustainable Management of Rural and Small Systems – USEPA/USDA webinar
- Jan 14 – Group Regulation of cVOCs Workgroup Conference call
- Jan 15 – DRWM Branch meeting
- Jan 23 – CCR 101 HQ webinar
- Jan 28 - Budget 101: Financial Management Presentation by Wendy Klinker
- Jan 29 – UCMR3 Regional Coordinators quarterly teleconference call
- Jan 30 – CCR Electronic Delivery HQ webinar
- Jan 31 – SDWIS Prime CME (Compliance Monitoring Enforcement) Process webinar
- Feb 13 (2nd Thursday of each month)- Phase II/V Implementation Workgroup Conference
- Feb 25-27 – RCTR webinar – State Primacy Requirements
- March 18-20 – RCTR webinar – Level 1 and Level 2 Assessments and Corrective Actions
- April 22-24 – RCTR webinar – Groundwater Systems

Travel/Leave

- Jan 6 & 10 – AWL
- Jan 7 – Episodic AWL
- Jan 13, 16 & 17 – AWL (regular schedule – Monday, Thursday & Friday of every week)
- Jan 20 – MLK holiday
- Feb 14 – 8 hours annual leave
- Feb 17 – President's Day holiday

Accomplishments/Activities

- Phase II/V Implementation Work Group: The timing for the release of the revised RTC criteria will not be for several months. Criterion for returning to compliance MCL violations will be modified to include or equal to the MCL and to remove the frequency language used for reducing to routine monitoring; since other criterion needed to be modified, a timeframe for the release of these two changes was not announced.
- Data Verification of KDHE PWSS Program – Discovered instances where compliance samples exceeded the MCL but the system did not conduct quarterly monitoring. This was for the Phase II/V rule (atrazine) and Stage 1 DBPs. Findings will be shared with Darrel Plummer for discussion the week of January 27.

- On January 9, Darrel Plummer, KDHE, forwarded an e-mailed received from Dianne Sands, KDHE, summarizing the conversation with Kimberly Detter, a citizen from Pretty Prairie concerned on the level and continued occurrence of nitrates reported by the drinking water system. Dianne Sands provided the citizen with my phone number. Since Scott Marquess, WENF, was going to be out of the office until Monday Jan 13, I forwarded the message to Diane Huffman, WENF. Diane called Ms. Detter and summarized the meeting that KDHE and EPA had with Pretty Prairie in the month of December to remedy the nitrate MCL violations.

- Primary Enforcement Responsibility – Notified Scott Marquess that KDHE is using the SFK SDIWS code for Consent Orders that were recently signed with Conway Springs and Timken; a SDIWS code had not been assigned for Hiawatha. The ETT will not recognize the SFK code as addressing the violations of the priority score. When Darrel Plummer returned from the holiday break, he e-mailed Region 7 that KDHE will be using SFL for Consent Orders. The ETT will recognize the SFL code as addressing the violations of the priority score.

- Over the holiday break a copy of the KRWA Clarifier was received. One of the articles summarized the 4 major changes from the KDHE Lab: 1) new collection/submission forms, 2) new analytical reports (electronic) 3) 30 hour holding time for coliform samples, and 4) increase in analytical cost for coliform and TTHM samples.

- Conducted review of the KDHE Operator Database to determine which system did not have an operator with an active certificate. Shared findings with Bob Dunlevy, DRWM. Discussions for how to share this with KDHE will be forthcoming, i.e., with Darrel Plummer, with Vicki or both.

- Received a call from Kurt William, Salina; their public drinking water system is in Bin 2 from the LT2 source water crypto monitoring. Salina has had a few instances in the month of December and January in the past 3 years where they could not attain ½-log removal because their influent turbidity was too low. Mr. Williams was asking if they could apply for a waiver or exemption. Mike Finn, HQ, has been consulted.

- Received e-mail from Kris Phillips, Michigan Drinking Water Program, Leader of the SDWIS Prime Sampling Focus Group. A questionnaire was provided. Will need assistance from Regional SDWIS folk to complete. The first group conference call will be Marhc/April 2014.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

RECEIVED

IN THE MATTER OF:

CASE No. 96-E-0263

DEC 19 2007

CITY OF PRETTY PRAIRIE, KANSAS
PUBLIC WATER SUPPLY ID #T4000

BUREAU OF WATER

COMPLIANCE WITH K.A.R. 1995 SUPP. 28-15-13(b),
ADMINISTRATIVE ORDER CASE No. 91-E-71,
PROCEEDING UNDER K.S.A. 1995 SUPP. 65-163

CONSENT ORDER

I. PRELIMINARY STATEMENT

The Kansas Department of Health and Environment (KDHE) and the City of Pretty Prairie (City), having agreed that settlement of this matter is in the best interest of all parties and the public, hereby represent and state as follows:

II. STATUTORY AUTHORITY

1. KDHE is a duly authorized agency of the state of Kansas, created by an act of the legislature. KDHE has general jurisdiction over matters involving public water supply and protection of public health under the authority of K.S.A. 1995 Supp. 65-163 *et seq.* The following Findings of Fact and Conclusions of Law are made and Consent Order issued under the authority vested in the Secretary of the Kansas Department of Health and Environment (Secretary) by K.S.A. 1995 Supp. 65-163.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

2. The City operates a public water supply system as defined by K.S.A. 65-162a. A public water supply system is defined as "a system for the provision to the public of piped water for human consumption, if such system has at least ten (10) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. Such term includes any source, treatment, storage or distribution facilities under control of the operator of the system and used primarily in connection with the system, and any, source, treatment storage or distribution facilities not under such control but which are used in connection with such system."

3. K.S.A. 65-171m states in part, "The secretary of health and environment shall adopt rules and regulations for the implementation of this act. In addition to procedural rules and regulations, the

secretary may adopt rules and regulations providing for but not limited to: (a) primary drinking water standards applicable to all public water supply systems in the state. The primary drinking water standards may: (1) identify contaminants which may have an adverse effect on the health of persons; (2) specify for each contaminant either a maximum contaminant level that is acceptable in water for human consumption, ..."

4. K.S.A. 1995 Supp. 65-163 states in part: "(2) Whenever an investigation of any public water supply system is undertaken by the secretary, it shall be the duty of the supplier of water under investigation to furnish to the secretary information to determine the sanitary quality of the water supplied to the public and to determine compliance with applicable state laws and rules and regulations. The secretary may issue an order requiring changes in the source or sources of the public water supply system or in the manner of storage, purification or treatment utilized by the public water supply system before delivery to consumers, or distribution facilities, collectively or individually, as may in the secretary's judgment be necessary to safeguard the sanitary quality of the water and bring about compliance with applicable state law and rules and regulations. The supplier of water shall comply with the order of the secretary."

5. As authorized by K.S.A. 65-171m, the secretary adopted a maximum contaminant level (MCL) for nitrate of 10 mg/l, measured as N, at K.A.R. 1995 Supp. 28-15-13(b).

6. Administrative order, Case No. 89-E-10 was issued to the City by KDHE on February 13, 1989. This order contained a schedule of actions for the City to follow to return to compliance with the nitrate MCL. This order was not appealed and became a final order of the Secretary.

7. On October 28, 1990, Administrative Order No. 90-E-71 was issued to the City for failure to comply with Administrative Order No. 89-E-10. Administrative Order No. 89-E-10 was included by reference. Administrative Order No. 90-E-71 assessed penalties of \$12,675 for failure to comply with Administrative Order No. 89-E-10. This Order was timely appealed.

8. On October 24, 1991, the City and KDHE entered into Consent Order No. 91-E-71. Administrative Orders 89-E-10 and 91-E-71 were included by reference. Under the Consent Order, the City waived its appeal of Administrative Order No. 90-E-71 and agreed to pay \$675 in civil penalty. The remaining penalty was dismissed on the condition that the City comply with a schedule to comply with the nitrate MCL.

9. In partial response to the consent agreement, the City constructed Well No. 5, which was placed into operation in November of 1994. At this time, Wells No. 3 and 4 were removed from service, and the City relied entirely on Well No. 5.

10. The nitrate levels in Well No. 5 have been as high as 11.31 mg/l in samples analyzed in the KDHE laboratory.

11. The City has expressed an interest in proceeding with a wellhead protection plan to protect the quality of water in the Pretty Prairie area, and to lower ambient groundwater nitrate levels.

12. K.S.A. 65-171r prohibits the following acts: "(c) the failure of a supplier of water under investigation to furnish information to the secretary under K.S.A. 65-163, and amendments thereto; (d) the failure of a supplier of water to comply with any final order of the secretary issued under the provisions of K.S.A. 65-163 or 65-163a, and amendments thereto; (e) the failure of a supplier of water to comply with a primary drinking water standard established under K.S.A. 65-171m, and amendments thereto unless a variance or exception has been granted;"

13. K.S.A. 65-171s states in part: "Any person who violates any provision of K.S.A. 65-171r shall incur, in addition to any other penalty provided by law, a civil penalty in an amount not more than \$5,000 for each violation."

IV. CONSENT ORDER

14. Therefore, based on the above and pursuant to K.S.A. 1995 Supp. 65-163, the Secretary hereby orders and the City hereby consents to comply with the following Schedule of Actions.

Schedule of Actions

15. The city shall test each point of entry to its distribution system for nitrate at least quarterly, using the KDHE laboratory, or a KDHE-certified laboratory. The City shall increase the sampling frequency to either monthly or weekly if directed to do so by KDHE. Results shall be submitted to KDHE by the 10th day of January, April, July, and October summarizing the results of all samples taken and analyzed in the previous quarter.

16. When the test results indicate the nitrate levels exceed the MCL of 10 mg/l, the City shall take the following actions:

a. Issue public notice on a quarterly basis as required by K.A.R. 1995 Supp. 28-15-15a. Copies of the notice shall be furnished to all area health care providers including medical doctors, clinics, hospitals, and the Reno County Health Department. Copies shall also be provided to day care centers and commercial establishments serving the traveling public, and posted in any roadside parks served by the City water system.

b. The City shall provide free of charge, an alternate source of drinking water for all infants less than six months of age, mothers nursing infants less than six months of age, and pregnant women. The drinking water provided must meet the requirements of K.A.R. 28-15-13. If bottled water is chosen to meet this requirement, the City shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the FDA concerning the source of the water and monitoring of water quality.

17. The City shall adopt and implement its wellhead protection program according to the following schedule. The wellhead protection program shall conform with the Kansas Wellhead Protection Program. A progress report shall be submitted to KDHE within 10 days of the dates outlined in the schedule.

a. The city shall complete delineation of the wellhead protection area no later than March 31, 1997.

b. The city shall complete an inventory of existing and potential pollution sources within the wellhead protection area no later than June 30, 1997.

c. The city shall complete development of management strategies for the existing and potential pollution sources identified above, with particular emphasis given to sources of nitrate contamination of the groundwater, no later than September 30, 1997.

d. The city shall submit its wellhead protection plan to KDHE for review by October 31, 1997.

e. The city shall adopt and implement its wellhead protection plan no later than December 31, 1997.

18. If nitrate levels exceed 15 mg/l in two of three consecutive quarters, upon notice by KDHE, the City will obtain or prepare a formal feasibility study, including cost estimates, of obtaining a new source of water, blending existing sources of water to produce acceptable quality of water, purchasing water of acceptable quality from a neighboring public water supplier, providing treatment to reduce the nitrate concentration to an acceptable level, or any combination of these options. The City shall submit the feasibility study to KDHE within twelve months of receiving notice from KDHE.

19. If nitrate levels exceed 20 mg/l in two of three consecutive quarters, this consent agreement will be revised to include a schedule requiring the City to implement an option identified in paragraph 18 above.

20. The City shall submit quarterly reports to KDHE discussing its progress in each of the following areas as appropriate: implementing the wellhead protection program required in paragraph 17 above; completing the feasibility study required in paragraph 18 above, or implementing the option selected according to paragraph 19 above.

V. OTHER PROVISIONS

21. All actions required to be undertaken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. In any action by KDHE to enforce the terms of this Consent Order, the City agrees not to contest the authority or jurisdiction of the Secretary of Health and Environment to issue this Consent Order.

22. This Consent Order shall apply to and be binding upon KDHE and the City, its agents, successors, and assigns. No change in the ownership or corporate status of the City shall alter its responsibilities under this Consent Order.

23. The City shall provide a copy of this Consent Order to any subsequent owners or successors before ownership rights are transferred. The City shall provide a copy of this Consent Order to all contractors, sub-contractors, and consultants which are retained to conduct any work performed under this Consent Order, within 14 days after the effective date of this Consent Order or the date of retaining their services. Notwithstanding the terms of any contract, the City is responsible for compliance with this Consent Order and for insuring that its contractors and agents comply with this Consent Order.

24. The activities conducted under this Consent Order are subject to approval by KDHE, and the City shall provide all appropriate necessary information consistent with this Consent Order requested by KDHE.

25. The City agrees to meet every term and condition of this Consent Order. Failure to meet the terms and requirements of the Schedule of Actions for improvements, or any term or condition of, or scheduled date of performance in this Order, or any report, work plan or other writing prepared pursuant to and incorporated into this Order, shall constitute a violation of this Consent Order and may subject the City to further enforcement action including but not limited to the assessment of civil penalties not to exceed \$5,000 per day for each day in which such violation occurs or failure to comply continues.

26. The provisions of this Consent Order shall terminate upon the receipt by the City, of written notice from KDHE that the City has demonstrated that the terms of this Consent Order, including any additional tasks which KDHE has determined to be necessary, has been satisfactorily completed. Failure to complete the Schedule of Actions for improvements by the specified dates will subject the City to further enforcement action.

27. (a) The City shall perform the requirements under this Consent Order within the time limits set forth herein unless, the performance is prevented or delayed solely by events which constitute a force majeure. For purposes of this Consent Order a force majeure is defined as any event beyond the control of the City which could not be overcome by due diligence and which delays or prevents performance by a date required by this Consent Order. Such events do not include increased costs of performance or changed economic circumstances. Any delay caused in whole or in part by action or inaction by federal or state authorities shall be considered a force majeure and shall not be deemed a violation of any obligations required by this Consent Order.

(b) The City shall have the burden of proving all claims of force majeure. Failure to comply by reason of force majeure shall not be construed as a violation of this Consent Order.

(c) The City shall notify KDHE in writing within seven days after becoming aware of an event which the City knew, or should have known, constituted force majeure. Such notice shall estimate the anticipated length of delay, its cause, measures to be taken to minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this section shall constitute a waiver of the City's right to assert a force majeure claim and shall be grounds for KDHE to deny the City an extension of time for performance.

(d) Within seven days of the receipt of written notice from the City of a force majeure event, KDHE shall notify the City of the extent to which modifications to this Consent Order are necessary. In the event KDHE and the City cannot agree that a force majeure event has occurred, or if there is no agreement on the length of the extension, the dispute shall be resolved by the Director of Environment under the Dispute Resolution Procedure provided herein.

(e) Any modifications to any provision of this Consent Order shall not alter the Schedule For Improvement or completion of other tasks required by this Consent Order unless specifically agreed to by the parties in writing and incorporated into this Consent Order.

28. This Consent Order may be amended by mutual agreement of KDHE and the City. Such amendments shall be in writing, shall have as their effective date the date on which they are signed by both parties and shall be incorporated into this Consent Order.

29. Dispute Resolution Procedure

(a) The parties recognize that a dispute may arise between them regarding implementation of the action to be taken as herein set forth or other terms or provisions of this Consent Order. If such dispute arises, the parties will endeavor to settle it by informal negotiations between themselves. If the parties cannot resolve the issue informally within a reasonable period of time, either of the parties may notify the other in writing stating specifically that informal negotiations have failed, that formal dispute resolution under this paragraph has commenced and stating its position with regard to the dispute and the reason therefore. A party receiving such a notice of dispute will respond in writing within ten (10) working days stating its position. The parties shall have an additional ten (10) working day period to prepare written arguments and evidence for submission to the other party. Any settlement shall be reduced to writing, signed by representatives of each party and incorporated into the Consent Order. If the parties are unable to reach an agreement following this procedure, the matter shall be referred to the Director of the Division of Environment, KDHE, who shall decide the matter and provide a written statement of his decision which shall be incorporated into the Consent Order.

(b) This dispute resolution procedure shall not preclude any party from having direct recourse to court if otherwise available by applicable law.

30. The requirements of this Consent Order represent the best professional judgement of KDHE at this time based on the available information. If circumstances change significantly so that data indicates an immediate threat of danger to the public health or safety or the environment or a significantly different threat other than the alleged deficiencies addressed herein, then KDHE reserves the right to modify dates or requirements herein as it deems reasonably necessary and the City reserves the right to appeal any such modifications or additional requirements.

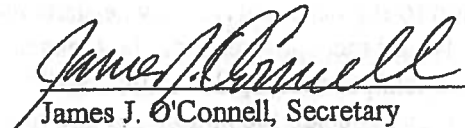
31. Nothing contained in this Consent Order shall affect any right, claim, interest, defense, or cause of action of any party hereto with respect to any person or entity not a party to this Order. This Order does not constitute a waiver, suspension, or modification of the requirements of applicable statutes or regulations which remain in full force and effect.

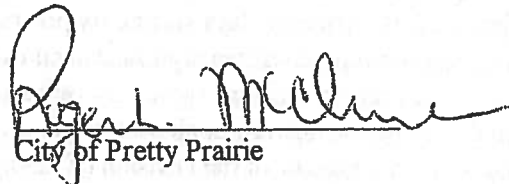
32. The parties hereto have affixed their signatures on the dates inserted below to acknowledge their agreement to this Consent Order. The signatories to this Consent Order certify that they are authorized to execute and legally bind the parties they represent to this Consent Order.

33. KDHE reserves the right to cancel or modify this agreement if new information concerning the health effects of nitrate is discovered.

34. Upon execution of this Consent Agreement, Case No. 91-E-71 is dismissed.

IT IS SO AGREED.


James J. O'Connell, Secretary
Kansas Department of Health
and Environment


City of Pretty Prairie

Dated: 15 Oct 96

Dated: 10-01-96



DRWM Rec'd MAY 29 2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

MAY 29 2008

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Article No.: 7004 2510 0006 9721 8390

The Honorable Curt Miller
Mayor of Pretty Prairie
119 West Main Street
Pretty Prairie, KS 67570

Dear Mayor Miller:

Re: Pretty Prairie Public Water System
PWS ID: KS2015501

This letter is a response to correspondence dated April 16, 2008, sent to the United States Environmental Protection Agency, Region 7 (EPA) by the city of Pretty Prairie, Kansas, regarding your request for a meeting related to ongoing nitrates violations at the Pretty Prairie Public Water System (PWS or system) and the actions taken by the Kansas Department of Health and Environment (KDHE) on this matter.

The state of Kansas has enacted regulations which are at least as stringent as the federal National Primary Drinking Water Regulations (NPDWR), and through KDHE has primary enforcement authority for the federal drinking water requirements in Kansas. EPA encourages the city of Pretty Prairie to work with KDHE to take decisive action to come into compliance with the nitrate MCL.

A Public Water System is required by the federal Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f et seq., to comply with the NPDWR. The NPDWR sets out Maximum Contaminant Levels (MCLs) for various contaminants, which are the highest levels at which a contaminant may be legally allowed in water provided to the public. The MCL for nitrate is 10 parts per million (ppm or mg/L).

The Pretty Prairie PWS has a documented history of exceeding the 10 ppm nitrate MCL. Ongoing violations of the nitrate MCL increases consumer exposure to the public health risks associated with nitrate, and consequently must be addressed by reducing the level of nitrates in the water supplied by the system. As EPA described in our correspondence dated February 4, 2008, to Pretty Prairie, provision of bottled water to the public by a PWS, while it may be an acceptable temporary measure to avoid unreasonable risk to health, does not exempt a PWS from its legal requirement to comply with the nitrate MCL.

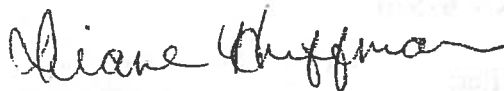
DRWM Rec'd MAY 2 9 2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EPA expects that any compliance agreement between Pretty Prairie and KDHE will promote measurable progress towards compliance, by the inclusion of clear milestones, an expected compliance date, and enforceable consequences for failure to adhere to the schedule. The Pretty Prairie PWS should achieve compliance with the nitrate MCL as soon as reasonably practicable. Failure to comply with the nitrate MCL, including failure to take required steps towards compliance, may subject the system to legal action by KDHE and/or EPA seeking civil penalties and/or injunctive relief requiring compliance.

EPA thanks Pretty Prairie for its invitation to meet. If you have any questions regarding these issues, please contact Stacie Tucker, of my staff, at (913) 551-7715.

Sincerely,



Diane Huffman
Chief, Water Enforcement Branch
Water, Wetlands and Pesticides Division

cc: Dave Waldo, Kansas Department of Health and Environment

bcc: Monica Wurtz, WWPD/DRWM



Kelly

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

DIRECTIVE

July 20, 2007

Curt Miller, Mayor
City of Pretty Prairie
119 West Main
PO Box 68
Pretty Prairie, Kansas 67570

Re: Public Water Supply: Nitrate MCL Non-Compliance
Federal ID No.: KS2015501
State ID No.: T4000

Dear Mayor Miller and City Council Members:

Drinking water delivered by the city of Pretty Prairie from Well 05/Treatment Plant 001 (Site ID #00123378) to its customers continues to exceed the maximum contaminant level (MCL) of 10 mg/L established for nitrate. The exceedance of the nitrate MCL has resulted in continuous violation of K.A.R. 28-15a-62. A summary of monitoring results is attached to this Directive.

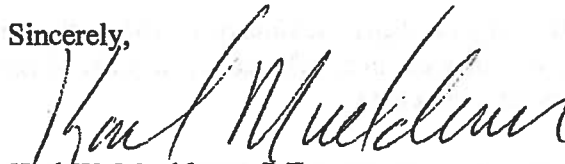
A Nitrate Consent Order previously issued to the City on August 20, 1996 did not result in compliance and has since expired. Therefore, in order to address the continued violations, the city of Pretty Prairie is hereby directed to:

1. Sample the water for nitrate at least once every three months (quarterly). The sampling frequency shall be increased to either monthly or weekly if instructed to do so in writing by KDHE. The City may use the KDHE laboratory or a KDHE-certified private laboratory for analysis. If a private laboratory is used, nitrate results shall be submitted to KDHE - Bureau of Water by the 10th day of January, April, July and October for the previous quarter.
2. When test results indicate the nitrate levels exceed the MCL of 10 mg/L at the point of entry, the city of Pretty Prairie shall take the following actions:
 - a. Issue public notice to all customers served as soon as possible within 24 hours in accordance with K.A.R. 28-15a-202. Copies of the notice shall be furnished to the county health department. A copy of the notice is also required to be submitted to the KDHE within 10 days of delivering such notice to your customers.

- b. Provide, free of charge, an alternate source of drinking water for all infants less than six months of age, mothers who are nursing infants less than six months of age, and pregnant women. The drinking water provided must meet the requirements of K.A.R. 28-15a-23. If bottled water is chosen to meet this requirement, the city of Pretty Prairie shall obtain a certification from the bottled water supplier that the bottled water meets the appropriate requirements of the U.S. Food and Drug Administration (FDA).
3. The city of Pretty Prairie shall obtain the services of a Kansas-licensed professional engineer to prepare a formal feasibility study, including cost estimates to comply with the nitrate MCL. The city of Pretty Prairie shall submit the Feasibility Study to the KDHE by **December 20, 2007**. The city of Pretty Prairie and the KDHE will jointly review the results of the feasibility study and determine a course of action. At a minimum, the feasibility study shall address the following options:
 - a. Obtaining a new source of raw water,
 - b. Obtaining water of acceptable quality from another public water supply,
 - c. Treatment options to reduce nitrate, including the feasibility of blending existing sources of water to produce acceptable quality water, and
 - d. If a new source can be obtained, minimizing the use of, or removing from service, the individual water well causing the problem.

Please submit the above mentioned items to the KDHE; Public Water Supply Section at 1000 SW Jackson, Suite 420; Topeka, KS 66612 as indicated. If you have any questions or need any assistance regarding this matter, please contact Kelly Kelsey at (785) 296-6297.

Sincerely,



Karl W. Mueldener, P.E.
Director, Bureau of Water

Attachment

KWM:kdk

pc: Reno County Health Department
KDHE-SCDO
DRP/PJC/DCS/1.0 File

ATTACHMENT

Nitrate results in red bold type are in violation of the MCL.

SUMMARY OF NITRATE RESULTS
1995 – Present

FEDERAL ID	SYSTEM NAME	COLLECT DATE	ANALYTE	RESULT	UNIT
KS2015501	PRETTY PRAIRIE, CITY OF	June 19, 2007	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 13, 2007	NITRATE	14	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 1, 2006	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 20, 2006	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	January 10, 2006	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	October 12, 2005	NITRATE	7	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 1, 2005	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 31, 2005	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	February 14, 2005	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	December 6, 2004	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 23, 2004	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 12, 2004	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	February 23, 2004	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 7, 2003	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 25, 2000	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	August 24, 2000	NITRATE	12	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	January 31, 1997	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 16, 1996	NITRATE	16	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	May 16, 1996	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 26, 1996	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 26, 1996	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	October 25, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 27, 1995	NITRATE	14	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	September 26, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	July 28, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 28, 1995	NITRATE	16	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	June 28, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 19, 1995	NITRATE	13	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	April 19, 1995	NITRATE	10	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	11	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	15	MG/L
KS2015501	PRETTY PRAIRIE, CITY OF	March 30, 1995	NITRATE	16	MG/L

Assessment of the Source of High Nitrate Concentration in the Pretty Prairie Well Water Supply

**A report for the City
of Pretty Prairie**

Donald O. Whittemore

**Kansas Geological Survey
The University of Kansas
Lawrence, Kansas
July, 2014**

ACKNOWLEDGMENTS

Masato Ueshima of the Kansas Geological Survey analyzed the water samples from the City of Pretty Prairie sent to the Kansas Geological Survey. The author appreciates the comments and edits of Tim Boese, Manager of Equus Beds Groundwater Management District No. 2, who reviewed a draft of the report.

The Kansas Geological Survey does not guarantee this document to be free from errors or inaccuracies and disclaims any responsibility or liability for interpretations based on data used in the production of this document or decisions based thereon.

INTRODUCTION

The city of Pretty Prairie requested the assistance of the Kansas Geological Survey (KGS) in assessing the source of increasing nitrate concentration in the water from the city supply well. The nitrate concentration has increased to levels substantially greater than the maximum contaminant limit (MCL) of 10 mg/L as nitrate-nitrogen ($\text{NO}_3\text{-N}$) for public supplies of drinking water.

Pretty Prairie is located in south-central Reno County in the southwest corner of Equus Beds Groundwater Management District No. 2 (GMD2) (Figure 1). Groundwater use in the Pretty Prairie area is primarily from unconsolidated sands and gravels in the High Plains aquifer. The depth from land surface to the underlying Permian bedrock (shale and siltstone) ranges from about 60 ft to 100 ft, although there are areas where depth to bedrock is less than 20 ft below land surface. The static water level is usually about 15 to 30 ft below land surface, although static water level is as high as less than 5 ft below land surface at monitoring well site EB502 and as low as 60 feet below land surface at site EB509. The general groundwater flow direction in the area of the city (within a mile of the city boundaries) is towards the east and northeast based on Fig. 2 in Townsend (1999).

Nitrate concentration in the groundwater has been known to exceed the MCL within parts of the area of Figure 1 since the 1990s based on the monitoring well network of GMD2. GMD2 studied the distribution and source of the nitrate concentration and reported that “the use of agricultural chemicals for the production of dryland and irrigated crops was identified as the primary non-point source” (Dealy, 1995). The study included the use of nitrogen isotopes in the nitrate source assessment. A later study by the KGS (Townsend, 1999) that focused on the Pretty Prairie area and that also used nitrogen isotopes came to a similar conclusion as the Dealy (1995) investigation; Townsend (1999) stated that “Use of nitrogen-15 indicates a predominantly fertilizer source for the nitrate.”

METHODS

The KGS suggested collection and analysis of groundwater samples from selected wells across the city of Pretty Prairie could provide information useful for comparison with previous chemical data and for determination of the potential of within city sources of nitrate. This approach was recommended as appropriate before needing to consider more involved sampling and analysis for nitrogen isotopes.

The City of Pretty Prairie collected samples of groundwater from five wells (Figure 2). The well locations included a well to the west of the city at the eastern end of the golf course (GC), two wells within the city to the east of the grain storage silos (PPHS and LR), a well south of the city limits (just to the south of W Pretty Prairie Road – EG), and a well just to the east of the southeast corner of the city (SCS). The wells within the city were chosen to be downgradient of where the former north-south railroad line along Sante Fe Avenue would have passed near to the grain silos, a potential area where fertilizer might have been offloaded in the past. The water

samples were analyzed at the KGS for specific conductance and dissolved concentrations of nitrate, chloride, and sulfate (Table 1). The City of Pretty Prairie provided data for analyses of water from the city supply well (Table 2). These data were assessed and compared to the results in the reports by Dealy (1995) and Townsend (1999) and in other reports.

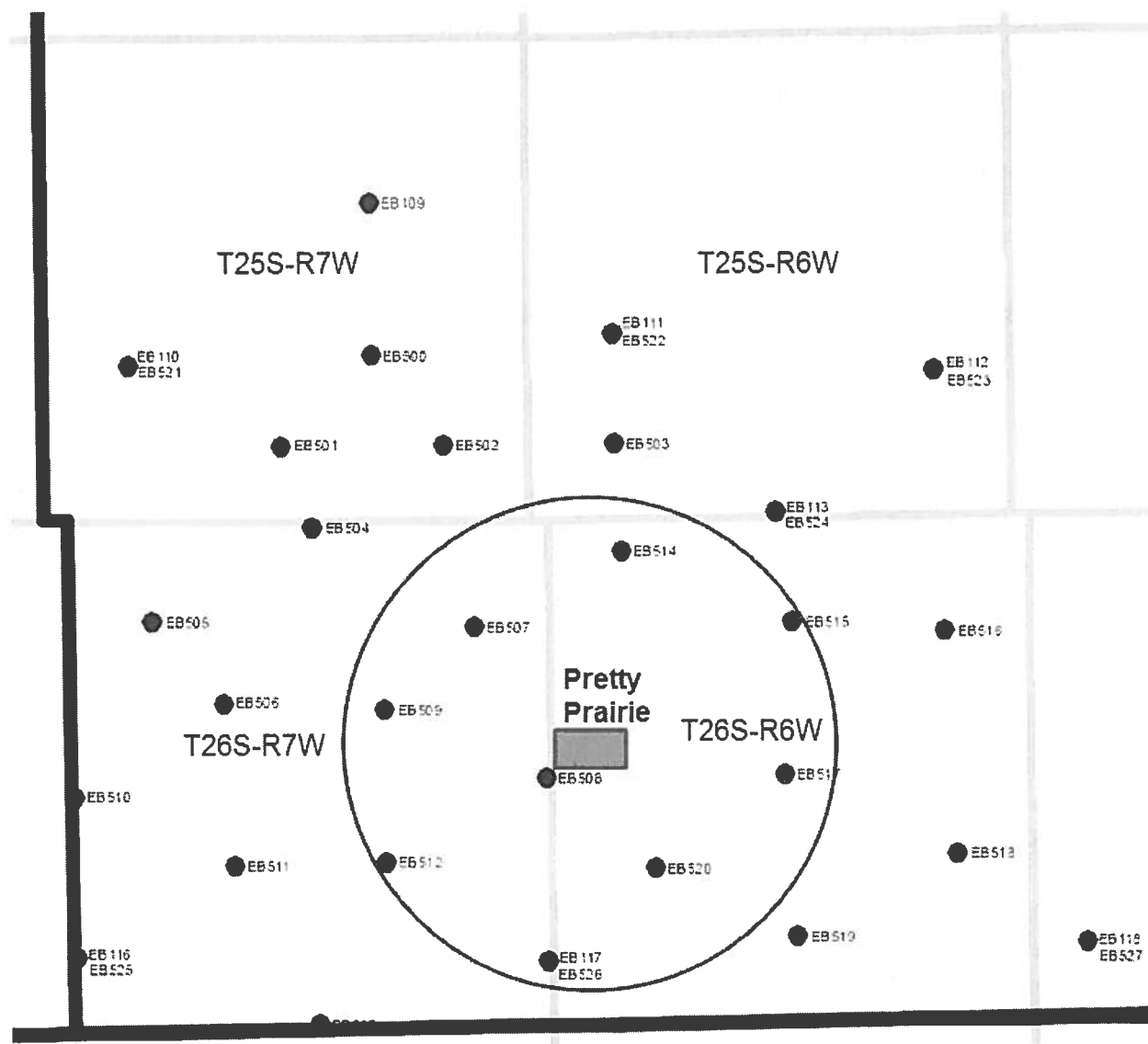


Figure 1. Southwest portion of GMD2 in south-central Reno County that includes the City of Pretty Prairie. The four squares outlined by the gray and red lines are 36-square mile townships (labeled with township and range numbers) that are each 6 miles across. The circle is approximately 6 miles in diameter and encloses Pretty Prairie and the locations of GMD2 EB monitoring wells discussed in this report. The bold red lines are the boundaries of the southwest corner of GMD2.

Table 1. Chemical data for groundwater samples collected by the City of Pretty Prairie from wells within and adjacent to the city in January 2014. Analyses by the Kansas Geological Survey.

KGS lab	Site	Sp.C. ^a	(Cl)	(SO ₄)	(NO ₃ -N)	number	name	Legal	location ^a	μS/cm	mg/L	mg/L
2014001	EG	26S-06W-19BAB	424	13.8	25.4	24.8	2014002	GC	26S-07W-13DDA	398	8.6	28.0
2014003	LR	26S-06W-18DCAB	536	21.6	20.1	20.3	2014004	PPHS	26S-06W-18DBC	462	20.5	26.7
2014005	SCS	26S-06W-17CCC	513	24.5	21.3	20.9						

^a Township-range-section and quarters from large to small based on USGS system (A = NE, B = NW, C = SW, D = SE) ^a Specific conductance at 25 °C

Table 2. Chemical data for groundwater samples collected from the public supply well of the City of Pretty Prairie.

Collection date	Sp.C. ^a	Chloride (Cl) mg/L	Sulfate (SO ₄) mg/L	Nitrate-nitrogen (NO ₃ -N) mg/L (range)
3/23/2009	400	11	25	
10/17/2011				13.6 -16
4/10/2012	440	10	24	
8/30/2012				15.5- 18.6
11/26/2013				18.6-20.2

^a Specific conductance at 25 °C

DISCUSSION

All of the samples collected in January 2014 within and adjacent to Pretty Prairie contained nitrate concentrations exceeding the public drinking water MCL of 10 mg/L (Table 1). The waters were all freshwaters with estimated total dissolved solids (TDS) concentrations in the range 240-320 mg/L (based on multiplying the specific conductance by 0.6, an approximate factor derived from the complete major inorganic analyses in Townsend [1999]). Although chloride and sulfate concentrations were higher than in the public supply well (Table 2), they were all relatively low for south-central Kansas.

The nitrate concentrations in the five well samples listed in Table 1 were in the general range of the nitrate concentrations in samples collected from the public supply well during the last few years (Table 2). The nitrate concentrations of the two samples within Pretty Prairie to the east of the grain silos (samples LR and PPHS) were in the range of the values for the public

supply well. Thus, no significant local nitrate source appears to be present in the center of the city. The nitrate concentration in the well in the golf course area to the west of the city (sample GC) is lower than the values for all of the other four wells and for the last two years of samples from the city supply well. Therefore, the source does not appear to be specially associated with the golf course (opened in 1996). The nitrate level in the water from the well located just outside the southeast corner of the city (sample SCS) is about the same as for the wells within the city (including the public supply well). The well water with the highest concentration (sample EB) is located just to the south of the city near two agricultural fields irrigated by center pivots (the dark green half circles to the south of the southwest part of the city shown in Figure 2).



Figure 2. Satellite map of the Pretty Prairie area taken between July 2010 and September 2011 (from Bing Maps). The color of the center pivot areas and wheat fields suggests that the photograph was taken during the summer after wheat harvest. The diameter of most of the full center pivot circles is 0.50 mile. The approximate locations of the five wells from which water

samples were collected in January 2014 are represented by the yellow-filled circles; the labels by the circles correspond to the site names in Table 1 and the points in Figure 3.

The nitrate and chloride concentrations of the five wells in the Pretty Prairie area sampled in January 2014 plot within the general range of the concentrations in samples from the GMD2 monitoring wells within a 3-mile radius of Pretty Prairie (Figure 3). The nitrate source in all of the GMD2 wells (except EB526D) within the 3-mile radius of Pretty Prairie with greater than 10 mg/L nitrate-nitrogen concentration was shown to be primarily derived from agricultural fertilizer (Dealy, 1995). The sample from EB526D had a nitrogen isotope signature in the range between fertilizer and animal waste nitrate sources. Dealy (1995) stated that “well 526D is near an abandoned farmstead and as such is suspect of being impacted by both animal and human wastes.” Both the nitrate and chloride concentrations have decreased during 2007-2012 in water from well EB526D comparison to the values for these constituents in the 1993 sample collected for nitrate and nitrate isotope determination.

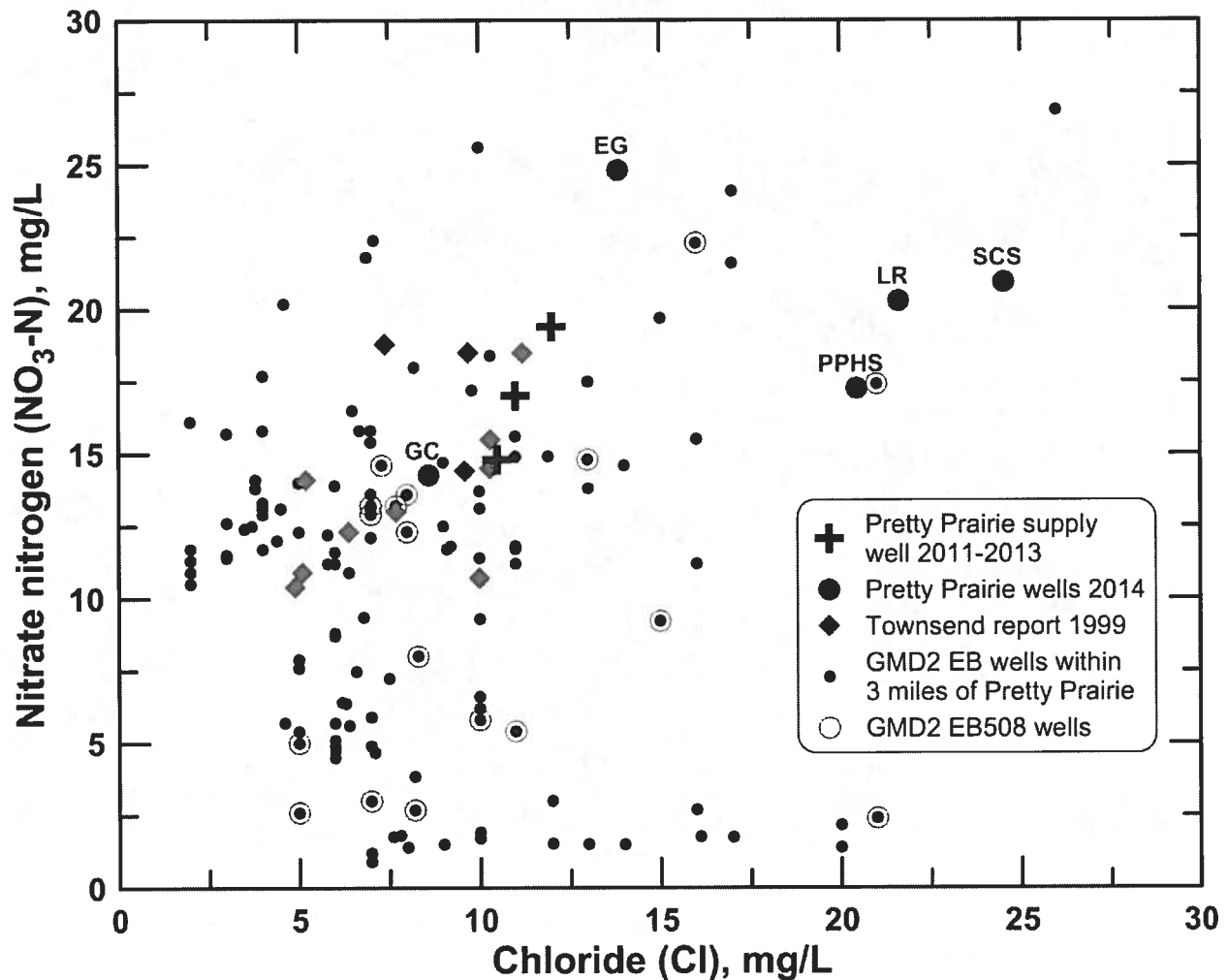


Figure 3. Nitrate versus chloride concentration for groundwaters within Pretty Prairie and the surrounding area within an approximately three-mile radius. The nitrate values for the three

points for the city supply well represent the averages of the three ranges for specific dates in Table 2; the chloride values are estimated based on the analyses in Table 2. The Pretty Prairie well data for 2014 are from Table 1. The data for GMD2 EB wells are from GMD2; the EB508 wells are located south of the golf course just outside the southwest corner of the city.

The chloride concentration in the wells in the city area collected in January 2014 is not as high as would be expected if a human or animal waste source were the primary origin of the nitrate. For example, Townsend (2007) found that a variety of human and animal waste sources (wastewater from the sewage treatment plant, abandoned septic systems, and farm animal wastes) appeared to be the origin of nitrate-nitrogen concentrations exceeding 10 mg/L in groundwaters with nitrogen-15 isotopic values greater than 10 per mil (‰) in the city of Lincolnvill, Kansas. The chloride concentration in groundwaters with high nitrate concentration in Lincolnvill exceeded 30 mg/L and in most waters exceeded 60 mg/L. In comparison, many of the well waters with nitrate-nitrate concentration below several mg/L contained a chloride concentration less than 30 mg/L.

The three well water samples within and just to the east of Pretty Prairie (samples PPHS, LR, and SCS) have somewhat greater chloride concentrations than the golf course and EG samples and most of the GMD2 monitoring well samples. This could be related to recharge of well water used for lawn watering that was affected by evapotranspiration concentration of dissolved solids and recharge of precipitation affected by road salt applied to the city roads. The distribution of nitrate and chloride concentrations does not indicate a substantial source of these constituents from leaching of remnant waste in individual septic systems that may have been present before the installation of the wastewater collection and treatment facilities of the city.

The nitrate concentration in groundwater sampled from the GMD2 monitoring wells within a 3-mile radius around Pretty Prairie (Figure 1) ranges from background levels (less than 3 mg/L) at wells EB507C and EB515C to over 20 mg/L at wells EB509A and EB514C in 2012 and at wells EB507A, EB508C, and EB514A in 2007 (Figures 4-6). The nitrate concentration in samples from monitoring wells in the depth range 60-71 ft shows a generally increasing trend (Figure 5). The monitoring wells with nitrate-nitrogen concentrations greater than 10 mg/L typically are near center pivot irrigation systems and what appear to be wheat fields in satellite photographs. The monitoring well with the lowest nitrate concentration (EB515C) is primarily surrounded by what appear to be grassed fields and a drainage area with grass and trees. The low nitrate concentration at well EB507C could be partly related to the screened interval of 101-111 ft below land surface, which is at the bottom of the High Plains aquifer at a greater depth than any of the other monitoring wells within a 3-mile radius of Pretty Prairie.

GMD2 monitoring well site EB508 is located south of the golf course and across the road from the southwest corner of Pretty Prairie. Two wells exist at the site: EB508A screened at 21-31 ft and EB508C screened at the bottom of the High Plains aquifer at 61-71 ft below land surface. The nitrate-nitrate concentration in samples from the shallow well has generally decreased from about 8-9 mg/L in 1992-1993 to 2.4 mg/L in 2012 (Figure 4). Thus, the recent land use in the area close to the well does not appear to be a significant source of nitrate but rather has allowed recharge to slowly dilute higher nitrate concentrations that occurred in the past. In contrast, nitrate-nitrogen concentrations in all samples from well EB508C have been greater than 10

mg/L, and have increased from the range 12.3-14.8 mg/L in the 1990s to 17.4-22.3 mg/L in the last two samplings (2007 and 2012) (Figure 5). The data suggest that nitrate sources farther from the immediate area around the well site are reaching the groundwater, migrating to greater depths below the water table, and then moving with groundwater flow to the site. The generally greater nitrate concentrations at the EB well depths of 60-71 ft in comparison with those at the shallower EB wells (Figures 4 and 5) also support this process.

The groundwater flow direction in the vicinity of Pretty Prairie is toward the east and northeast based on Figure 2 in Townsend (1999). Cultivated fields, including center pivot systems, on which nitrogen fertilizers would be applied are located in the upgradient flow direction from the city and the location of the public supply well. Precipitation recharge and irrigation return flow could carry dissolved nitrate not completely used by crops to below the root zone to the water table. Dispersion of recharge by groundwater flow, including along the downward curved flow lines locally created during pumping around irrigation and other wells, would move the high-nitrate concentration to deeper in the aquifer. The high-nitrate groundwater would then flow faster in the more permeable portions of the aquifer (the sands and gravels) in which water supply wells are typically screened than in the less permeable fine sands, silts, and clays.

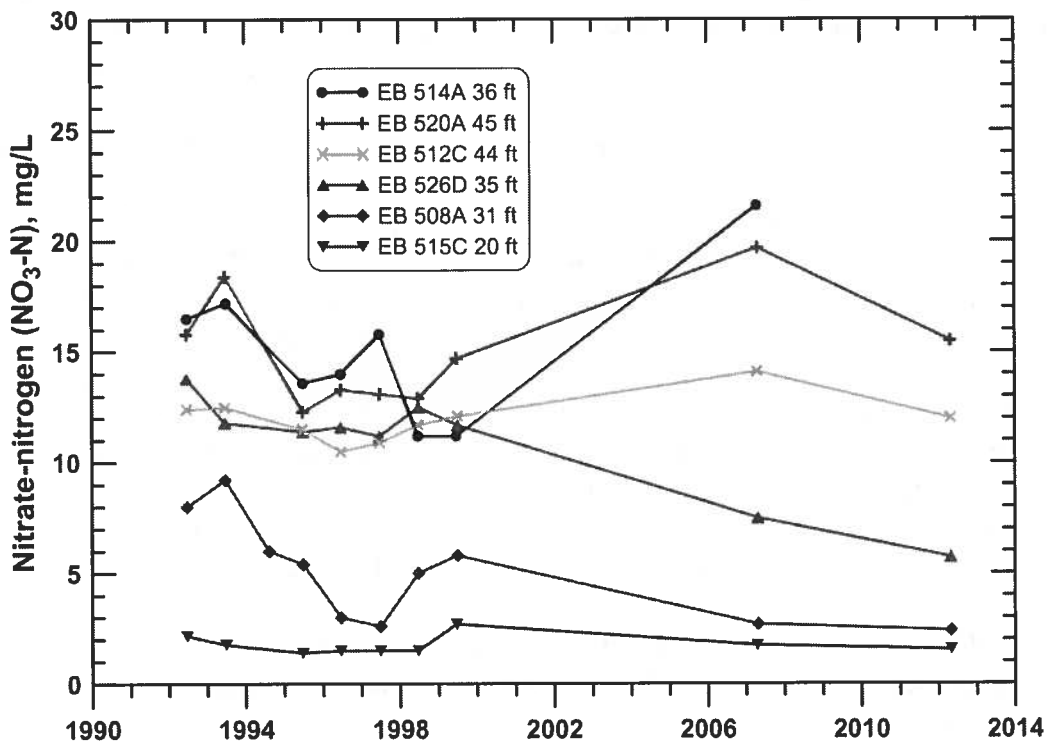


Figure 4. Variation in nitrate concentration in GMD2 monitoring wells screened at shallow depths (20-45 ft) in the High Plains aquifer within a 3-mile radius of Pretty Prairie.

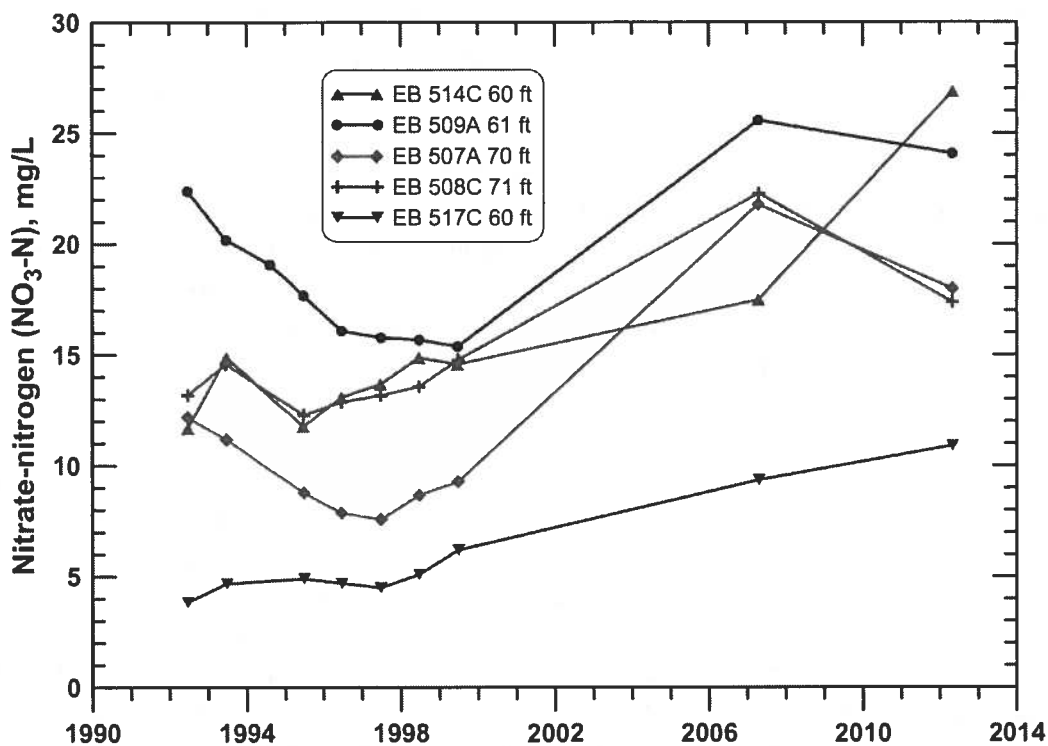


Figure 5. Variation in nitrate concentration in GMD2 monitoring wells screened at depths of 6071 ft in the High Plains aquifer within a 3-mile radius of Pretty Prairie.

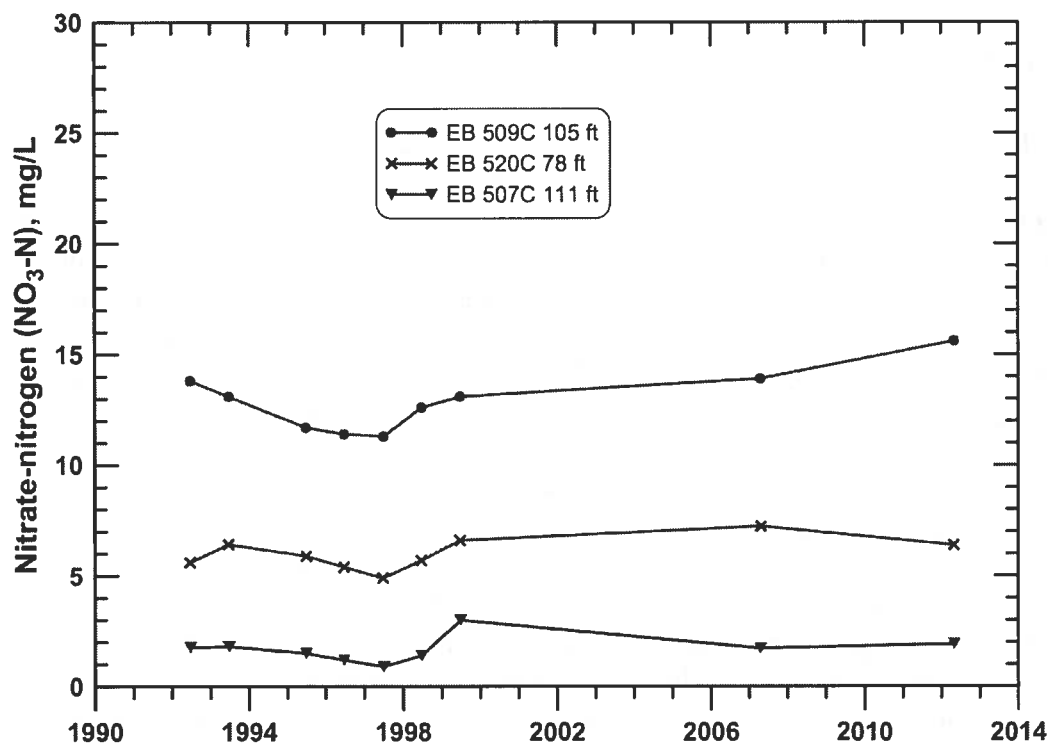


Figure 6. Variation in nitrate concentration in GMD2 monitoring wells screened at depths of 78-111 ft in the High Plains aquifer within a 3-mile radius of Pretty Prairie.

The Pretty Prairie municipal supply well located to the northeast of the city is in the northeast corner of a rectangular agricultural area that appears to be a wheat field. Center pivot irrigated fields are located to the northwest and west-northwest of the city supply well. These could provide local sources of fertilizer derived nitrate in the groundwater. The golf course and some lawns within the city are probably fertilized and lie in an upgradient direction of groundwater flow from the city supply well. Although these could provide some nitrate to the groundwater, it is noted that the nitrate concentration in the groundwater from the well immediately downgradient of the golf course had the lowest concentration of any of the five samples collected in the city area in January 2014. The nitrate-nitrogen concentration in this well water was 14.3 mg/L in comparison with the range of 18.6-20.2 mg/L for the city supply well in 2013.

Pumping by the city well would create a cone of depression in the water table that could result in drawing in high-nitrate water originating from below the nearby agricultural fields and possibly below lawns in the city. The city supply well is screened in sand and gravel at 76-98 ft in the bottom portion of the High Plains aquifer. Although shallower parts of the aquifer at the city well also contain sand and gravel, some thin clay layers and streaks occur within this zone. In addition, the 62-66 ft depth interval at the well consists of fine sand and clay, with the clay comprising approximately 50% of the interval. Thus, some of the water drawn in by the city well over time could also possibly derive from groundwater flow through the sand and gravel zone in which the well is screened that was recharged with high nitrate water farther to the west and southwest of the city.

CONCLUSIONS

High nitrate concentration is pervasive in much of the groundwater throughout the Pretty Prairie region and is generally associated with areas of cultivated fields where agricultural fertilizers are applied. Studies by Dealy (1995) and Townsend (1999) identified the primary source of the nitrate contamination as fertilizer based on nitrogen isotopes. The chloride concentration associated with the high nitrate groundwater in the Pretty Prairie region as well as in the area within and immediately adjacent to the city is also consistent with a fertilizer source and not a human or animal waste source. The source of the high nitrate concentration in the city does not appear to be derived from a local area near the grain silos in the center of the city.

The fertilizer source of nitrate in the water from the city supply well is expected to be derived primarily from agricultural application but may possibly include some lawn fertilizer. Agricultural fields and city residences as well as a golf course are within the general direction of groundwater flow towards the city well. However, fertilizer associated with the golf course does not appear to be a significant source of nitrate based on the distribution of nitrate concentration in the groundwater in the area. Although some of the high-nitrate water could have originated from local fields and possibly a small amount from some lawns, some could also be from agricultural fields farther upgradient (in groundwater flow direction) from west and southwest of the city; the groundwater from these areas could be flowing through the most permeable portions of the High Plains aquifer through the city area to the city supply well. Determination of the

amount of fertilizer applied to the lawns in the city in comparison with the amount applied to agricultural fields within a couple miles in the upgradient regional flow direction and the cone of depression in the water table around the city well when it is pumping might provide a rough estimate of the relative contribution of the fertilizer sources.

Reducing the amount of fertilizer applied in the area upgradient of the city supply well could be a potential approach to decreasing the level of nitrate concentration in the groundwater drawn in by the well. The decrease in nitrate concentration in groundwater sampled from the shallow well at GMD2 monitoring well site EB508 could reflect such a reduction, based on the replacement of the former agricultural land use with a golf course and grassed area. Reduction of nitrate leaching from cropland through farm management practices has been reviewed and assessed in Dzurella et al. (2012). The beneficial effects of changing agricultural land-use practices on the nitrate concentration of groundwater used for municipal supply is being demonstrated for the city of Woodstock in Ontario, Canada (Haslauer et al., 2005). Alternative cropping and fertilizer practices are being used to reduce the amount of nutrients applied to fields in the upgradient direction of groundwater flow to the Woodstock municipal well field. However, although the nitrate concentration of the groundwater could be decreased by such practices in the Pretty Prairie area, the relatively shallow water table and thin saturated thickness of the aquifer, in addition to the wide-spread agricultural land use involving fertilizer application, could make it difficult to bring the current nitrate concentration, which is about twice that of the MCL, down to below the MCL for drinking water.

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History of Pretty Prairie Public Water Supply **Pretty Prairie, Kansas**

Background Information:

Population: 600

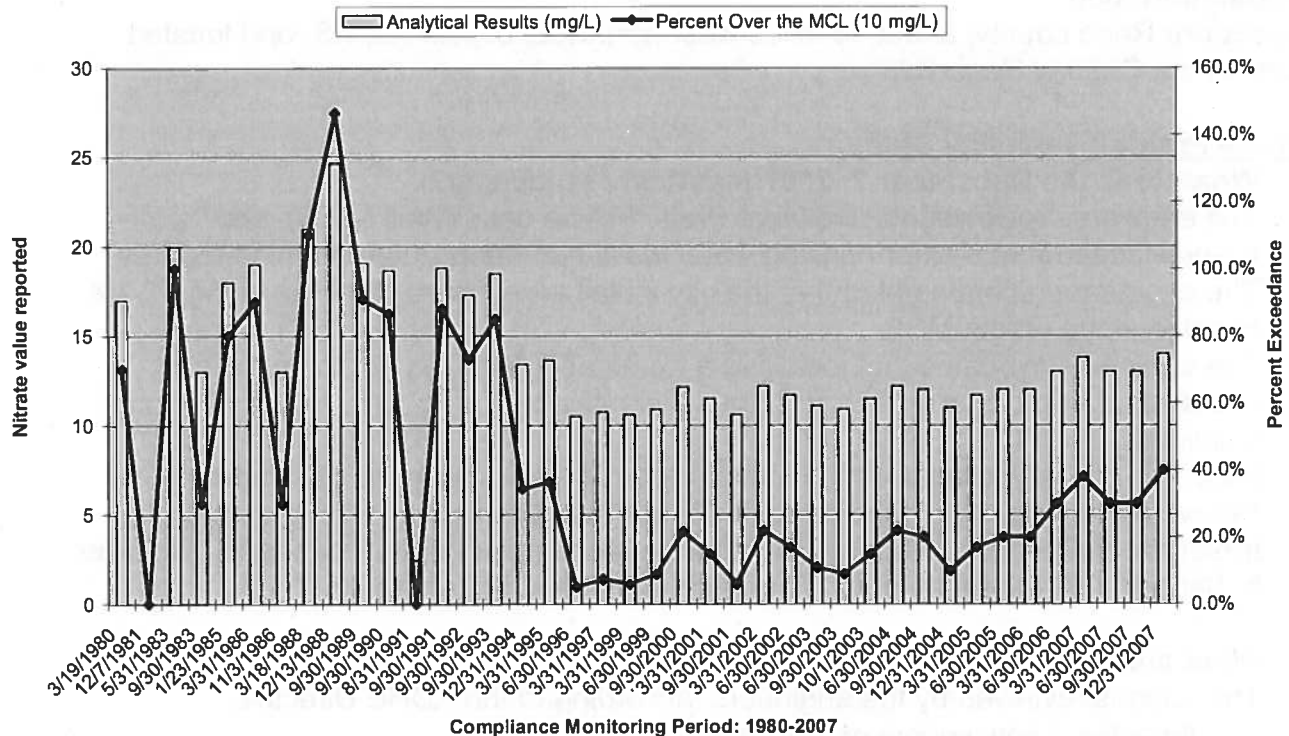
Location: Reno county; about 46 miles west-northwest of Wichita, KS; and located west of the Cheney Reservoir.

Pretty Prairie Feasibility Study:

- **What does the December 7, 2007 feasibility study say?**
 - The engineers reviewed the well that Pretty Prairie uses (Well No. 5), and acknowledged that 2 other drinking water wells had been closed for high nitrates.
 - The engineers recommended that the city install a treatment plant the costs \$1.2M to achieve the nitrate MCL
 - The engineers indicated that installing a treatment plant was not the most cost effective, but would provide Pretty Prairie with the best long-term nitrate treatment solutions.
 - Based on the advantages and disadvantages of each treatment alternative reviewed, the engineers recommended that Pretty Prairie construct a central treatment plant and utilize the ion exchange process for nitrate treatment, discussed in Section 4.5 of the feasibility study (also presented in Table 6.1).
- **What are the options?**
 - The options reviewed by the engineers, according to the KDHE Directive:
 - Obtaining a new source of raw water
 - Purchase water of acceptable quality from another PWS
 - Treatment options to reduce nitrate, including the feasibility of blending existing sources of water
- **What does the city need to move forward?**
 - Pretty Prairie needs to coordinate a course of action with KDHE to meet the nitrate MCL.
- **What is KDHE doing?**
 - Monitoring Pretty Prairie violations, and encouraging Pretty Prairie to take action based on the KDHE Directive issued in July 2007
 - As of April 30, 2008, KDHE has not placed Pretty Prairie under any kind of schedule
 - As of April 30, 2008, KDHE did not indicate when it would provide a compliance schedule with milestone date for Pretty Prairie to implement the feasibility study findings, such as bid contracts, award contracts, or commence construction of the recommended treatment system.

Chronology of Actions and Violations:

Summary of Nitrate MCL Violations in Pretty Prairie Public Water System Pretty Prairie, KS



- **1979 - 1993** – SDWIS data indicates nitrate levels varying between 13 – 25 mg/L.
- **1994** – Pretty Prairie constructed new well. Brief return to compliance with nitrate MCL.
- **1996 - 2008** – SDWIS data indicates that Pretty Prairie continued to have nitrate MCL exceedances. Levels range from 11 to 14 mg/L.

February 1989 - KDHE issued Administrative Order 89-E-10 on 2/13/1989 with a compliance schedule including actions to be taken to meet nitrate MCL.

- Pretty Prairie did not appeal this KDHE Order, so the Order became final.

October 1990 – KDHE issued Administrative Order 90-E-71 on 10/28/1990 for failure to comply with AO 89-E-10 & pay \$12,675 in penalties.

- Pretty Prairie appealed this KDHE Order before it became final.
- KDHE AO 89-E-10 was incorporated by reference.
- This Order did not become effective, so KDHE and Pretty Prairie entered into enforcement negotiations.

October 1991 – KDHE and Pretty Prairie entered into Consent Order 91-E-71 on 10/24/1991 for violations.

- Pretty Prairie agreed to comply with nitrate MCL by following compliance schedule & paying \$675 in civil penalties.

- KDHE dismissed the remaining penalty on the condition that Pretty Prairie had to comply with a compliance schedule to RTC with the nitrate MCL.

January 1994 – EPA issued an Administrative Compliance Order to Pretty Prairie on January 3, 1994 for violations of the nitrate MCL.

- ACO required Pretty Prairie to take certain scheduled steps to bring its PWS into compliance with the nitrate MCL of 10 mg/L.
 - Advertising for construction bids of necessary improvements to the system,
 - Awarding a contract for construction of improvements, and
 - Completing construction for necessary improvements to the PWS.
- Pretty Prairie only completed the requirement to advertise for construction bids.

February 1994 – Pretty Prairie filed a Petition for Review by the Court on February 17, 1994, because EPA and KDHE denied Pretty Prairie's request for an exemption from the nitrate MCL.

February 1994 – Pretty Prairie filed a Petition for Review by a different Court on February 17, 1994, challenging the issuance of EPA's ACO.

March 1994 – Pretty Prairie and EPA held conference calls about Pretty Prairie's strategy to RTC with the nitrate MCL.

- At the end of March 1994, Pretty Prairie provided EPA additional details of its proposal to develop a new source well with concentrations below nitrate MCL.
- EPA agreed to amend the ACO to extend the deadline for awarding the construction contract until April 11, 1994.

April 1994 – EPA and Pretty Prairie met and agreed to take a number of actions from April to June 1994.

- EPA agreed to extend the deadline for Pretty Prairie to award the construction contract for PWS improvements until June 10, 1994.
- Pretty Prairie agreed to provide EPA with additional information about the cost of building a new treatment facility for the PWS
- Pretty Prairie stated its intention to drill a new test well
- Pretty Prairie agreed to analyze the quality of the water and report its findings to EPA by May 25, 1994.
- Meeting scheduled for June 1, 1994 to discuss Pretty Prairie's options for complying with the SDWA.
- EPA began to amend the January 1994 ACO, based on these commitments.

June 1, 1994 – EPA and Pretty Prairie held a conference call.

- Pretty Prairie submitted information about its plan to drill a new well.
- EPA advised Pretty Prairie that the likelihood of drilling a new water supply well which could produce water under the nitrate MCL for reasonable period of time appeared low.
- Pretty Prairie identified three possible routes for bringing its PWS back into compliance with the nitrate MCL.

- 1. Drill a new water supply well which can produce water with a nitrate level at or below the 10 mg/L MCL.
- 2. Install an ion exchange water treatment system, based on sodium chloride technology. This approach presented a waste disposal problem of the sodium chloride, but Pretty Prairie had identified a disposal well that can accept the wastes in accordance with the SDWA.
- 3. Install an ion exchange water treatment system based on potassium chloride technology. Relatively new treatment technology, the approach had an advantage because the waste solids could be disposed of in the sewers.
- Pretty Prairie preferred to drill a new well, and had concluded a series of activities to enable the city to determine the viability of that approach.
- Pretty Prairie expected to have sufficient data by August 8, 1994 to commit to implementation of 1 of the 3 approaches discussed above.

June 1994 – EPA issued an Amended Administrative Compliance Order on Consent Docket VII-93-PWS-04 on June 27, 1994 that required Pretty Prairie to achieve compliance with the nitrate MCL.

- Pretty Prairie Mayor had to notify EPA by August 8, 1994 what approach the city would take to RTC with the nitrate MCL.
- Pretty Prairie had to achieve compliance with the nitrate MCL by the following dates using the following treatment technologies:
 - November 1, 1994 – if Pretty Prairie drilled a new city water supply well
 - March 1, 1995 – if Pretty Prairie installed a conventional sodium chloride ion exchange water treatment system
 - March 1, 1995 – if Pretty Prairie installed a continuous ion exchange system (potassium chloride) water treatment system
- Pretty Prairie had to continually implement bottled water and public notification programs UNLESS
 - Certified to EPA that sampling November 1994 – January 1995 showed that the nitrate level was consistently below nitrate MCL, OR
 - Certified to EPA that the selected ion exchange treatment system was in operation, and sampling confirmed that the nitrate level was consistently below nitrate MCL

November 1994 - June 1995 – Pretty Prairie chose to drill a new well to comply with the nitrate MCL.

- Well No. 5 was constructed and placed into operation for the Pretty Prairie system.
- Pretty Prairie removed Wells No. 3 and 4 from service, and relied entirely on Well No. 5.

June 1995 – Pretty Prairie's new well achieved compliance with the terms of the EPA Amended ACO.

- Pretty Prairie achieved compliance with the nitrate MCL for a short time.

Early to mid-1996 – EPA closed the Consent Order, once Pretty Prairie demonstrated compliance with the nitrate MCL for a three month period.

- After the Consent Order was closed, Pretty Prairie's new well (Well No. 5) did not maintain compliance with the nitrate MCL, as EPA had suspected and advised in June 1994.

August 1996 – KDHE issued Consent Order 96-E-0263 to Pretty Prairie.

- Pretty Prairie expressed interest in proceeding with a wellhead protection plan
- Pretty Prairie did not appeal this KDHE Order, so the Order became final.

August 1996 – A KDHE letter to Pretty Prairie indicated that EPA agreed to close its ACO with Pretty Prairie after the KDHE Consent Order is executed.

October 15, 1996 - KDHE Consent Order 96-E-0263 for Pretty Prairie became effective and required the following steps towards compliance:

- The Consent Order commits the city to participate in the Kansas Wellhead Protection Program, and
- The Consent Order contains elements of the Kansas Nitrate Compliance Strategy.
- The Order was designed to expire in 7 years, per the then-draft Kansas Nitrate Strategy

March 1997- KDHE/EPA execute the Kansas Nitrate Strategy

- Intent was to establish a response procedure to address PWSs with recurring nitrate MCL violations in Kansas.
- Implemented through Admin. Orders to expire 7 years from issuance.
- Options to achieve compliance with the nitrate MCL of 10 mg/L included:
 - Blending
 - New Source
 - Purchase from another PWS
 - Ion exchange
 - Reverse osmosis

April 2005 – EPA R7 reviewed PWS files at KDHE for FY03 Annual Program Evaluation (APE) during April 20-21, 2005.

- Pretty Prairie files indicated that the PWS was out of compliance with the 24 hour public notification requirement in 40 CFR 141.202

February 2007 – KDHE issued a letter to EPA about Nitrate Strategy.

- KDHE still had Orders in place, and will honor Orders until they expire.
- KDHE identified strategy to resolved systems out of compliance with nitrate MCL
- KDHE agreed to commit to review 2005 and 2006 nitrate results from 6 systems (including Pretty Prairie) for nitrate violations occurring in 2 out of any 3 consecutive quarters.
- KDHE agreed to issue a directive to require systems in violation with nitrate MCL to hire a consulting engineer to prepare an engineering report and cost estimates to RTC with nitrate MCL.
- KDHE agreed to review the engineers' cost estimates with each water system and negotiate a schedule to complete the best option.

July 20, 2007 – KDHE issued a Directive to Pretty Prairie. The Directive outlined the following requirements:

- Sample water for nitrate once every 3 months (quarterly)
- If the test results indicate nitrate MCL exceedance at the point of entry, then Pretty Prairie had to do the following:
 - Issue public notice to all customers within 24 hours
 - Provide an alternate source of drinking water free of charge to infants, nursing mothers, and pregnant women
 - If Pretty Prairie chose to use bottled water to meet this requirement, then Pretty Prairie had to obtain certification from the bottled water supplier that the bottled water meets the appropriate US FDA requirements [there are no time restrictions for this choice, contradicting the SDWA]
- Pretty Prairie had to obtain the services of an engineer to prepare a formal feasibility study, including cost estimates to comply with the nitrate MCL
- Pretty Prairie had to submit the Feasibility Study to KDHE by December 20, 2007
- Pretty Prairie and KDHE were to jointly review the results of the study and determine a course of action.
- At a minimum, the feasibility study had to address the following options:
 - Obtaining a new source of raw water
 - Purchase water of acceptable quality from another PWS
 - Treatment options to reduce nitrate, including the feasibility of blending existing sources of water
 - If new source water can be obtained, minimizing the use of, or removing from service, the individual water well causing the violations

December 7, 2007 – KDHE received the feasibility study results from Pretty Prairie

December 2007 – Pretty Prairie met with KDHE to discuss the feasibility study findings and recommendations.

- KDHE and Pretty Prairie discussed that feasibility study identified treatment options to comply with the nitrate MCL.
- The feasibility study indicated that a \$1.2M treatment plant was the least expensive and most feasible option for compliance with the nitrate MCL.

January - February 2008 – Pretty Prairie was in the Unaddressed SNC List for 1QtrFY08 (Oct.-Dec. 2007), which is generated from SDWIS.

- KDHE indicated in its response to EPA that Pretty Prairie's feasibility study identified the \$1.2M treatment plant as the most feasible option for compliance with the nitrate MCL.

January 11, 2008 – Pretty Prairie article in local newspaper

- Pretty Prairie spent \$7,500 for a nitrate feasibility study

- 2007 feasibility study provided options starting at \$1.2M
- Pretty Prairie Council discussed the nitrate issue and the feasibility study findings at their regular council meeting on Monday, January 7th.
- Pretty Prairie requested justification from KDHE and EPA for the change in the nitrate policy of allowing bottled water after the feasibility study confirmed that a study completed in the mid-1990s indicated that solving the problem with a convention approach would cost the city
- The recommended solution for the study conducted in the mid-1990s was for the city to install a costly ion exchange treatment system. The city would have needed to containerize, and to obtain a solid waste permit from KDHE to get rid of the sodium chloride generated by the ion exchange treatment.
- The city chose not to follow this option in the mid-1990s, partly because KDHE couldn't write a solid waste permit for this situation in advance.

February 4, 2008 – EPA sent a letter to Pretty Prairie clarifying that Pretty Prairie could not use bottled water indefinitely.

- EPA's letter clearly stated that according to the SDWA, bottled water was only for use on a temporary basis, and not as a means of treatment to comply with the nitrate MCL.

February 22, 2008 – Pretty Prairie article in local newspaper

- Mayor was concerned that EPA's February 2008 letter didn't provide a clear explanation of steps to take, since Pretty Prairie could no longer use bottled water as a substitution for treatment.
- Estimated cost of installing a water treatment system will be \$1.2M.
- Pretty Prairie town residents may have their water rates boosted by at \$16 per month to afford treatment.

April 16, 2008 – Pretty Prairie sent EPA a letter inviting the Agency to meet and discuss nitrate issues.

- It appears that Pretty Prairie wants to discuss its practice of using bottled water, and why the Kansas Nitrate Strategy is no longer in effect.
- Pretty Prairie has met with EPA in the past to discuss nitrate MCL violations, and was able to discuss extensions for compliance schedules

May 16, 2008 – EPA drafted a letter to send to Pretty Prairie, encouraging Pretty Prairie to cooperate with KDHE and to implement the findings of the feasibility study as the means to achieve compliance with the nitrate MCL.

May 19, 2008 – Pretty Prairie's current status with KDHE:

- Pretty Prairie is not currently in the 2QtrFY08 (Jan.-March 2008) Unaddressed SNC List

FYI:

March 3, 2008 – USGS report for *Vulnerability of Recently Recharged Ground Water in the High Plains Aquifer to Nitrate Contamination*:

- Relative background concentration discussed, starting on page 22
- Parts of Reno County, including Pretty Prairie and the Cheney Reservoir, are identified in several maps indicating contamination occurring in non-irrigated agricultural land originating from non-point sources
- Hydrologists' model maps indicate that Pretty Prairie has a 41-80% probability of background nitrate concentrations greater than 4 mg/L for a regional water table depth of 0-30.5 meters

Physical / geological: Reno County has the following characteristics, which surrounds Pretty Prairie, and may influence some of PWS wells:

- Arkansas River Lowlands to the north and west – sand and gravel deposits, irregular hills, and sand dunes
- Wellington and McPherson Lowlands to the southwest and northeast – permeable sand and gravel, and a large quantity of high-quality water in the Equus beds nearby
- Osage Questas underlying Pretty Prairie – hill-plain or broad-terraces, steep eastern slopes, with plentiful limestone supply